NSA-220 Plus

Network Storage Appliance

User's Guide

Default Login Details	
Web Address	nsa220plus
User Name	admin
Password	1234

Firmware Version 3.10
Edition 1, 2/2009
Color: Black / White

ZyXEL

www.zyxel.com

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About This User's Guide

Intended Audience

This manual is intended for people who want to configure the NSA using the web configurator. A basic knowledge of TCP/IP networking concepts and topology will be helpful.

Related Documentation

- Quick Start Guide

  The Quick Start Guide is designed to help you get up and running right away. It contains information on setting up your network and configuring for Internet access.

- Web Configurator Online Help

  Embedded web help for descriptions of individual screens and supplementary information.

- Support Disc

  Refer to the included CD for support documents.

- ZyXEL Web Site

  Please refer to www.zyxel.com for additional support documentation and product certifications.

User Guide Feedback

Help us help you. Send all User Guide-related comments, questions or suggestions for improvement to the following address, or use e-mail instead. Thank you!

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Customer Support

In the event of problems that cannot be solved by using this manual, you should contact your vendor. If you cannot contact your vendor, then contact a ZyXEL office for the region in which you bought the device. See http://www.zyxel.com/web/contact_us.php for contact information. Please have the following information ready when you contact an office.

- Product model and serial number.
- Warranty Information.
- Date that you received your device.
- Brief description of the problem and the steps you took to solve it.

Disclaimer

Graphics in this book may differ slightly from the product due to differences in operating systems, operating system versions, or if you installed updated firmware/software for your device. Every effort has been made to ensure that the information in this manual is accurate.

Document Conventions

Warnings and Notes

These are how warnings and notes are shown in this User's Guide.

> **Warnings tell you about things that could harm you or your device.**

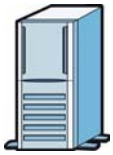
Note: Notes tell you other important information (for example, other things you may need to configure or helpful tips) or recommendations.

Syntax Conventions

- The NSA may be referred to as the "NSA", the "device" or the "system" in this User's Guide.
- Product labels, screen names, field labels and field choices are all in **bold** font.
- A key stroke is denoted by square brackets and uppercase text, for example, [ENTER] means the "enter" or "return" key on your keyboard.
- "Enter" means for you to type one or more characters and then press the [ENTER] key. "Select" or "choose" means for you to use one of the predefined choices.
- A right angle bracket (>) within a screen name denotes a mouse click. For example, **Maintenance > Log > Log Setting** means you first click **Maintenance** in the navigation panel, then the **Log** sub menu and finally the **Log Setting** tab to get to that screen.
- Units of measurement may denote the "metric" value or the "scientific" value. For example, "k" for kilo may denote "1000" or "1024", "M" for mega may denote "1000000" or "1048576" and so on.
- "e.g.," is a shorthand for "for instance", and "i.e.," means "that is" or "in other words".

Icons Used in Figures

Figures in this User's Guide may use the following generic icons. The NSA icon is not an exact representation of your device.

NSA	Computer	Notebook computer
Server 	Television	Firewall
Router	Switch	Internet

Safety Warnings

- Do NOT use this product near water, for example, in a wet basement or near a swimming pool.
- Do NOT expose your device to dampness, dust or corrosive liquids.
- Do NOT store things on the device.
- Do NOT install, use, or service this device during a thunderstorm. There is a remote risk of electric shock from lightning.
- Connect ONLY suitable accessories to the device.
- Do NOT open the device or unit. Opening or removing covers can expose you to dangerous high voltage points or other risks. ONLY qualified service personnel should service or disassemble this device. Please contact your vendor for further information.
- ONLY qualified service personnel should service or disassemble this device.
- Make sure to connect the cables to the correct ports.
- Place connecting cables carefully so that no one will step on them or stumble over them.
- Always disconnect all cables from this device before servicing or disassembling.
- Use ONLY an appropriate power adaptor or cord for your device.
- Connect the power adaptor or cord to the right supply voltage (for example, 110V AC in North America or 230V AC in Europe).
- Do NOT allow anything to rest on the power adaptor or cord and do NOT place the product where anyone can walk on the power adaptor or cord.
- Do NOT use the device if the power adaptor or cord is damaged as it might cause electrocution.
- If the power adaptor or cord is damaged, remove it from the power outlet.
- Do NOT attempt to repair the power adaptor or cord. Contact your local vendor to order a new one.
- Do not use the device outside, and make sure all the connections are indoors. There is a remote risk of electric shock from lightning.
- CAUTION: RISK OF EXPLOSION IF BATTERY (on the motherboard) IS REPLACED BY AN INCORRECT TYPE. DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS. Dispose them at the applicable collection point for the recycling of electrical and electronic equipment. For detailed information about recycling of this product, please contact your local city office, your household waste disposal service or the store where you purchased the product.
- Do NOT obstruct the device ventilation slots, as insufficient airflow may harm your device.

Your product is marked with this symbol, which is known as the WEEE mark. WEEE stands for Waste Electronics and Electrical Equipment. It means that used electrical and electronic products should not be mixed with general waste. Used electrical and electronic equipment should be treated separately.

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PART I
Introduction

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1

Getting to Know Your NSA

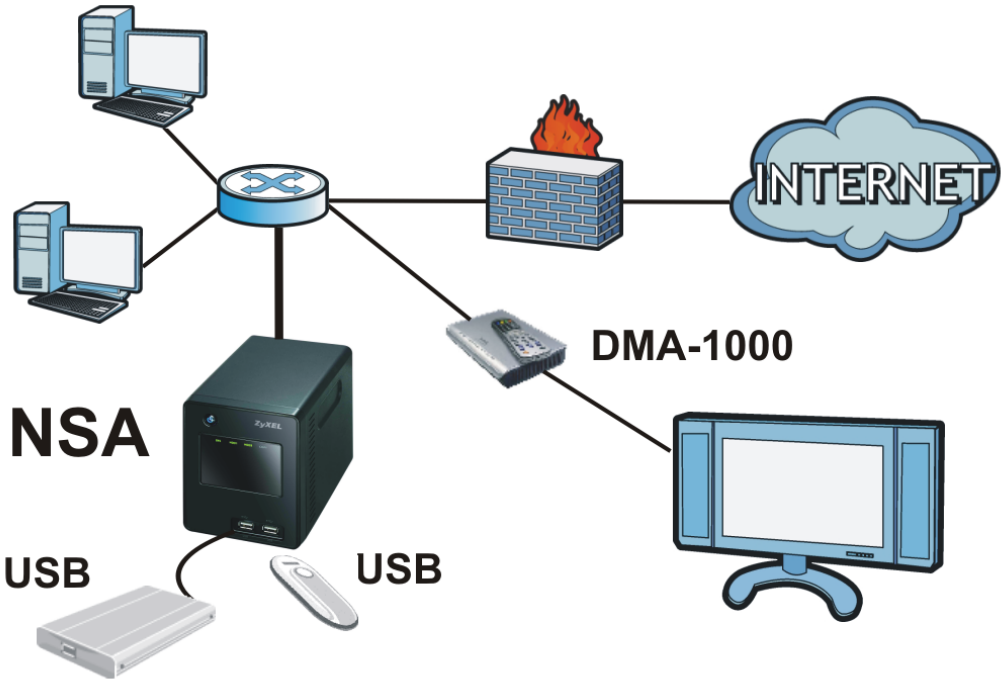
This chapter covers the main features and applications of the NSA.

1.1 NSA Overview

Use the NSA (Network Storage Appliance) to do the following.

- Share files between computers on your network.
- Back up files from your computers to the NSA.
- Use the **COPY/SYNC** button to copy or synchronize files between the NSA and USB devices like card readers, MP3 players, memory sticks, and digital cameras without using a computer.
- Have the NSA handle large file downloads.
- Automatically download files from website feeds for convenient viewing.
- Play the NSA's video, music and photo files on your computers using the included media client software.
- Play the NSA's video, music and photo files on hardware-based media clients like the DMA-1000.
- Use the NSA's website to share files with remote users.
- Use iTunes on your computer to play video and music files stored on the NSA.
- Share printers.
- Automatically upload photo and video files to your FTP server, Flickr and YouTube accounts.

Figure 1 Example of the NSA in a Home Network



Above is the NSA in a home network. Users back up and share data on the NSA. The DMA-1000 plays the NSA's media files on the TV. A USB hard drive provides extra storage space and files are copied directly from the USB memory stick to the NSA.

Place the NSA behind a firewall and/or IDP (Intrusion Detection and Prevention) device to protect it from attacks from the Internet.

Note: See Chapter 14 on page 245 for a more detailed list of NSA features and lists of compatible hard drives and USB devices.

Refer to the Quick Start Guide for hardware connections and how to install and remove hard drives from the disk trays.

Note: Turn off and disconnect the NSA before you install or remove internal hard drives.

1.1.1 LEDs

The NSA LEDs (lights) tell you important information.

Figure 2 NSA Front Panel

Figure 3 NSA Rear Panel

This table describes the NSA's LEDs.

Table 1 LEDs

LED	COLOR	STATUS	DESCRIPTION
POWER	Blue	On	The NSA is turned on and receiving power.
		Off	The NSA is turned off.
HDD1/ HDD2	Green	On	The hard disk drive is connected properly to the NSA.
		Blinking	The NSA is saving data to the hard disk drive.
	Orange[A]	On	The NSA detected an error on the hard disk drive (like a bad sector for example). The NSA automatically tries to recover a bad sector, but the LED stays orange until the NSA restarts.
		Blinking	The hard disk drive connection came loose or the NSA detected an error on the hard disk drive (like a bad sector for example) and is saving data to the hard disk drive.
	Red	On	The hard disk drive has failed and the NSA can no longer detect it.
		Off	The NSA cannot detect a hard disk in the disk bay.
SYS	Green	On	The NSA has fully started and is operating normally.
		Blinking	The NSA is starting up.
	Red	On	The NSA has failed.
LAN	Green	On	The NSA has a successful 10/100 Mbps Ethernet connection.
		Blinking	The 100M LAN is sending or receiving packets.
		Off	The NSA does not have a 10/100 Mbps Ethernet connection.
	Yellow	On	The NSA has a successful 1000 Mbps Ethernet connection.
		Blinking	The 1000 M LAN is sending or receiving packets.
		Off	The NSA does not have a 1000 Mbps Ethernet connection.
COPY/ SYNC	Green	On	A USB device is connected to the NSA.
		Blinking	The NSA is copying or synchronizing files to or from the USB device.
	Red	On	Copying or synchronizing files to or from the USB device failed.
		Off	No USB device is connected.

A. The **HDD1** and **HDD2** LEDs are dual-color (green and red). The green LED is normally on when you have a hard disk installed. If the NSA detects an error on the disk, the disk's connection comes loose, or the disk fails, the red LED also comes on. Since the green LED still stays on, the color appears to be orange. If the NSA is no longer able to detect a hard disk in the disk bay, the green LED turns off and the LED appears as red.

1.1.2 COPY/SYNC Button

Use the **COPY/SYNC** button on the front panel to copy or synchronize files between a connected USB device and the NSA. See Section 7.8 on page 164 for more details on how to configure the copy/sync settings.

1.1.3 RESET Button

Use the **RESET** button on the rear panel to restore the NSA's default settings.

Figure 4 The RESET Button

- Press the **RESET** button until you hear one beep (after about two seconds), then release it. You will hear one more beep after you release the button.

  This resets the NSA's IP address and password to the default values.
- Press the **RESET** button until you hear two beeps. After the second beep, continue pressing the button for five more seconds, then release it. You will hear three quick beeps after you release the button.

  This resets the NSA to the factory default configuration. All settings you have configured on the NSA, including IP address, password, user accounts, groups, and so on will be reset to the factory defaults.

  The reset process does NOT affect the volume settings, nor data stored on the NSA.

You should periodically back up your configuration file to your computer (see Section 11.5 on page 220 for details about managing the NSA's configuration file). You could then restore your configuration in the event that you or someone else reset the NSA to the factory defaults.

Note: You should keep the NSA in a secure location in order to prevent unauthorized reset of the device.

2

Web Configurator Basics

2.1 Overview

This chapter describes how to access the NSA web configurator and provides an overview of its screens.

The web configurator is an HTML-based management interface that allows easy NSA setup and management using an Internet browser. Use Internet Explorer 6.0, Mozilla Firefox 1.07, Netscape Navigator 7.0 or later versions of these browsers. The recommended screen resolution is 1024 by 768 pixels or higher.

In order to use the web configurator you need to allow:

- Web browser pop-up windows from your device. Web pop-up blocking is enabled by default in Windows XP SP (Service Pack) 2.
- JavaScript (enabled by default).

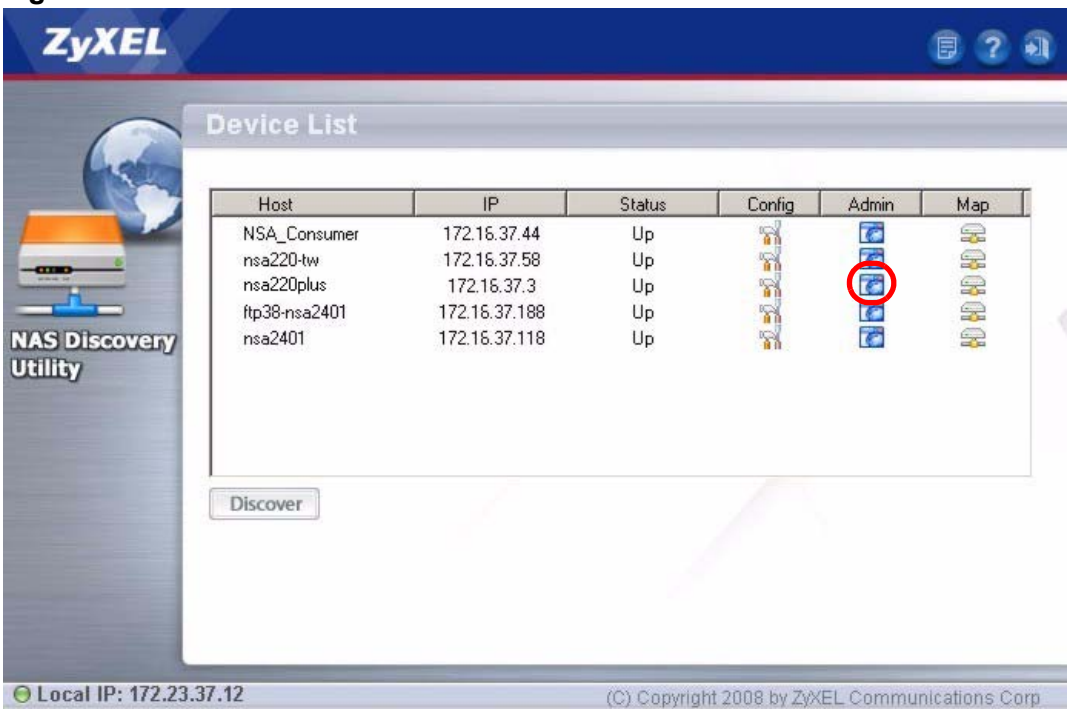
2.2 Accessing the NSA Web Configurator

Make sure your NSA is properly connected and that your computer is in the same subnet as the NSA (refer to the Quick Start Guide or the appendices).

2.2.1 Access the NSA Via NDU

If you don't know the IP address of the NSA, then use the NDU to find it. Refer to the Quick Start Guide for how to install and run the NDU.

Figure 5 NDU Main Screen

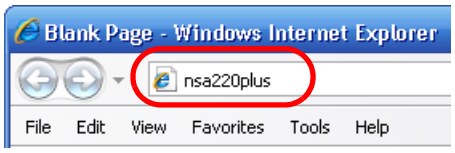


From the NDU main page click an icon under **Admin** to see the web configurator's login screen.

2.2.2 Web Browser Access

Open your browser and type in the server name of the NSA ("nsa220plus" by default).

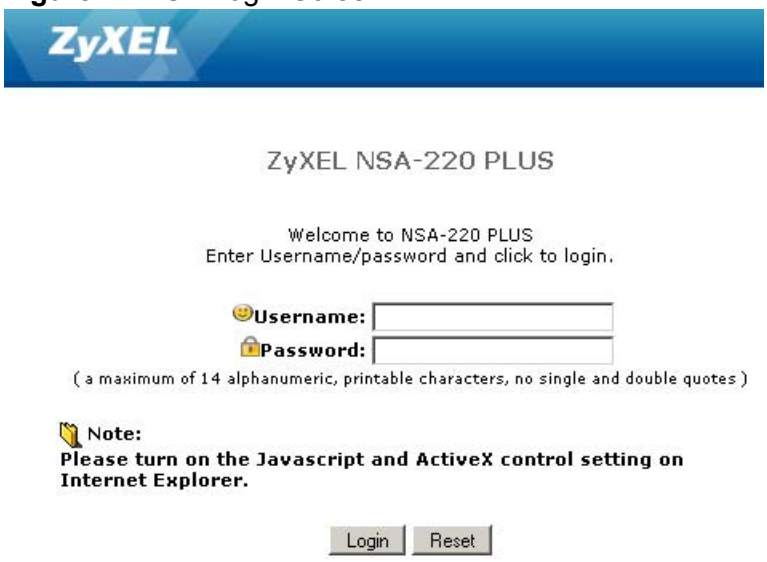
Figure 6 NSA URL



2.3 Login

The default username and password are ‘admin’ and ‘1234’ respectively. Enter your username and password, then click **Login**. See Chapter 8 on page 185 for how to create other user accounts.

Figure 7 NSA Login Screen


ZyXEL
ZyXEL NSA-220 PLUS
Welcome to NSA-220 PLUS
Enter Username/password and click to login.
Username:
Password:
(a maximum of 14 alphanumeric, printable characters, no single and double quotes)
Note:
Please turn on the Javascript and ActiveX control setting on Internet Explorer.
Login
Reset

You should see a screen asking you to change your password (highly recommended) as shown next. Type a new password (and retype it to confirm) and click **Apply** or click **Ignore**.

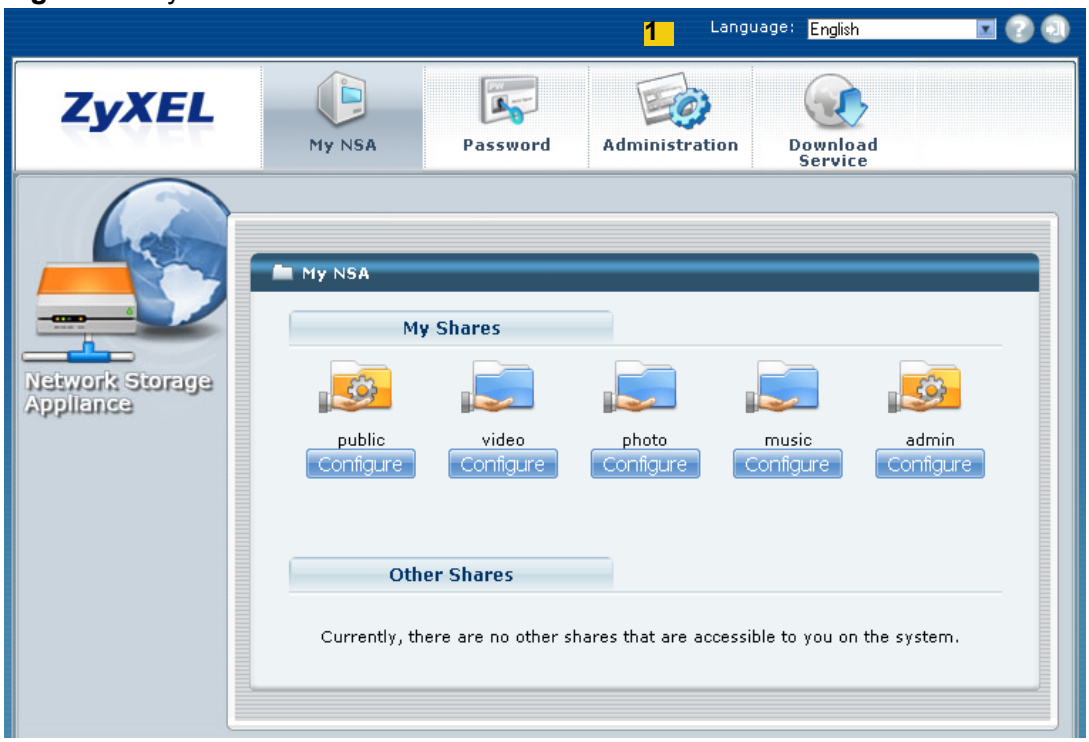
Figure 8 Change Password Screen

ZyXEL
Update Admin Info
As a security precaution, it is highly recommended that you change the admin password.
New Password:
Password (Confirm):
(a maximum of 14 alphanumeric, printable characters, no single and double quotes)
Apply
Ignore

2.4 User-level Screens Overview

All users (including the administrator) first see the user-level access **My NSA** screen after login.

Figure 9 My NSA



Note: The web configurator management session automatically times out if it is left idle for 15 minutes. Simply log back into the NSA if this happens to you.

The icons and language label at the top-right of the screen (1) are visible from most screens. Use the tabs at the top of the screen to navigate between the user-level screens and menus. The following table describes the 'global' icons and tabs in the user-level screens.

Table 2 User-level Global Labels and Icons

LABEL/ICON	DESCRIPTION
Language	Select the web configurator language from the drop-down list box.
Help	Click this to open a web help page specific to the screen you are currently configuring.
Logout	Click this at any time to exit the web configurator.
My NSA	Click this to go to screens where you can manage your shares and access the files on public shares. The administrator must go into the administration screens to manage other user's shares.
Password	Click this to go to a screen where you can change your password.

Table 2 User-level Global Labels and Icons

LABEL/ICON	DESCRIPTION
Administration	This tab displays when you log in as the administrator. Click this to go to screens where you can manage advanced configurations.
Download Service	This tab displays when you log in as the administrator. Click this to go to screens where you can have the NSA handle file downloads. See Section 7.4.1 on page 138 for more information.

2.5 My NSA Screens

Use the **My NSA** screens to manage your shares and access the files in folders to which you have access.

A share is a set of user access permissions for a specific folder on a volume (gives someone access to a folder). It is equivalent to the Windows concept of a shared folder, but the access rights are independent of the folder (you configure the share and the folder separately). You can map a share to a network drive for easy and familiar file transfer for Windows users.

The main **My NSA** screen displays the shares to which you have access.

Figure 10 My NSA

The following table describes the labels in this screen.

Table 3 My NSA

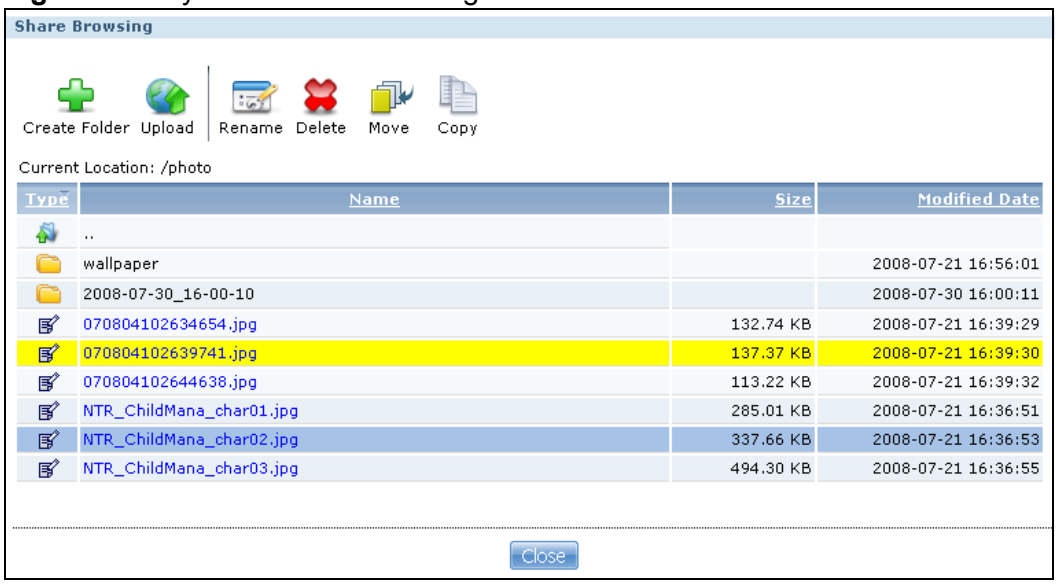
LABEL	DESCRIPTION
My Shares	These are the shares that you own (and manage). The share icons are folder shaped. Click a share icon to access the share's contents. A plain share icon displays for a share on a volume on the internal hard drives. A USB symbol displays on the icon for a share on an external (USB) device. An external share's icon turns gray if the share is not currently available (because the USB device was removed for example). An orange icon displays a built-in system share created by the NSA. The administrator owns and manages the public shares.
Configure	Click this to see and configure the management details for a share.
Other Shares	These are other shares on the internal hard drives or external (USB) devices that you can access (but not manage).

2.5.1 My NSA Share Browsing Screen

Click **My NSA** and then click a share to open the following screen. Use the **My NSA** share browsing screens to see and access share contents.

- Click a folder's name to go into the folder.
- Click a file's name to be able to save the file to your computer.
- Click the play icon to play the file. At the time of writing this is supported for MP3 files.
- Click to the right of a file or folder name to select it.
- Use the [SHIFT] key to select a range of entries. Hold down the [CTRL] key to select multiple individual entries.

Figure 11 My NSA Share Browsing



The following table describes the labels in this screen.

Table 4 My NSA Share Browsing

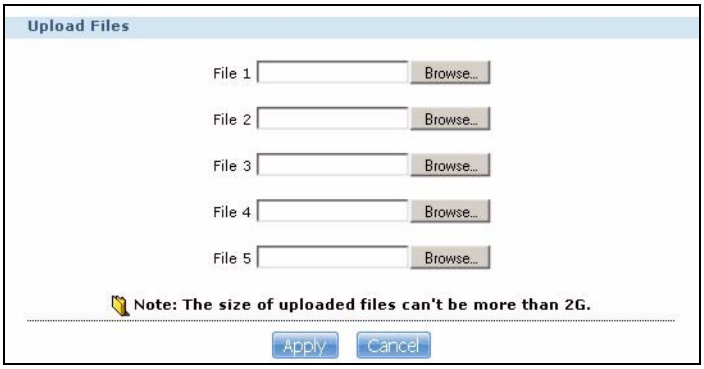
LABEL	DESCRIPTION
Create Folder	Click this to create a new folder within the share. Specify a name to identify the folder. See Section 2.5.5 on page 38 for more information on folder names. Click **Apply** to create a folder.
Upload	Click this to add files to the share. Use the **Browse** button to locate a file and click **Apply** to upload the file. 

Table 4 My NSA Share Browsing (continued)

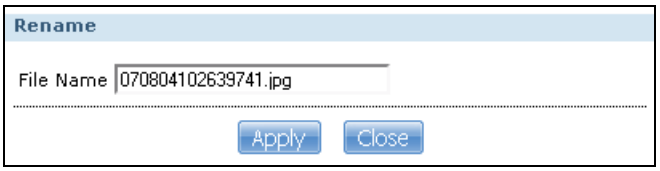
LABEL	DESCRIPTION
Rename	Select a folder or file and click this to open the **Rename** screen. Enter the name you want and click **OK** to make the changes. See Section 2.5.5 on page 38 for more information on the number and types of characters you can use to name a folder or file. Note: When you change a file name, make sure you keep the file extension unchanged. 
Delete	Select a folder or file and click this to open a warning screen. Click **Yes** to delete the file, or click **No** to close the screen.
Move	Select a folder or file and click this to move it to another location within this share or another share that you can access. See Section 2.5.2 on page 35 for more details.
Copy	Select a folder or file and click this to move create a copy of it in another location within this share or another share that you can access. See Section 2.5.2 on page 35 for more details.
Current location	This is the name of the share and folder path that you are in.
Type	The icon in this column identifies the entry as a folder or a file. The folder with an arrow pointing up is for the link that takes you to the next higher layer in the share's folder tree.
Name	This column identifies the names of folders and files in the share. Click **Up One Level** to go to the next higher layer in the share's folder tree. Click a file's file name to open the file or save it to your computer. Click a folder's name to display the folder's contents.
Size	This column displays a file's size in bytes.

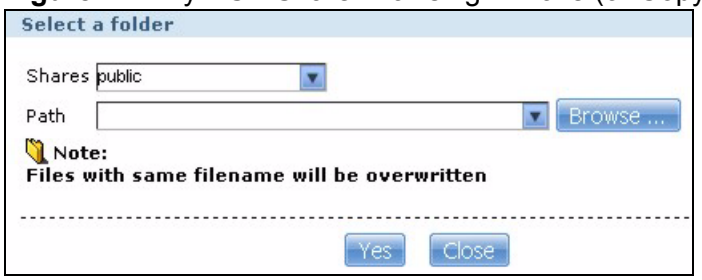
Table 4 My NSA Share Browsing (continued)

LABEL	DESCRIPTION
Modified Date	This column displays the last time the file or folder was changed (in year-month-day hour:minute:second format).
Close	Click this to return to the **My NSA** screen.

2.5.2 My NSA Share Browsing Move or Copy Screen

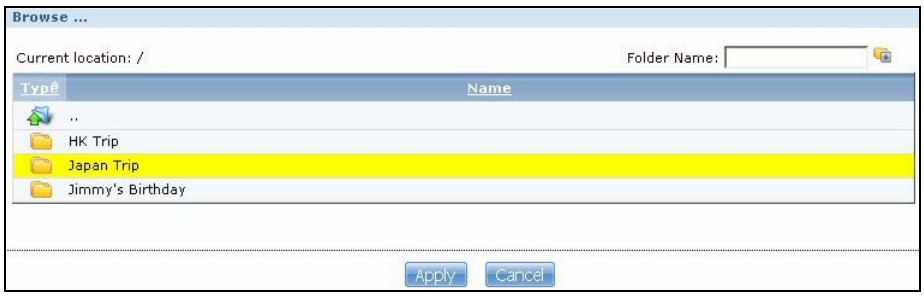
Select a folder or file in the **My NSA** share browsing screens and click the **Move** button or the **Copy** button to display a screen like the following. Use this screen to select the target path for moving or copying the folder or file.

Figure 12 My NSA Share Browsing > Move (or Copy)



The following table describes the labels in this screen.

Table 5 My NSA Share Browsing > Move (or Copy)

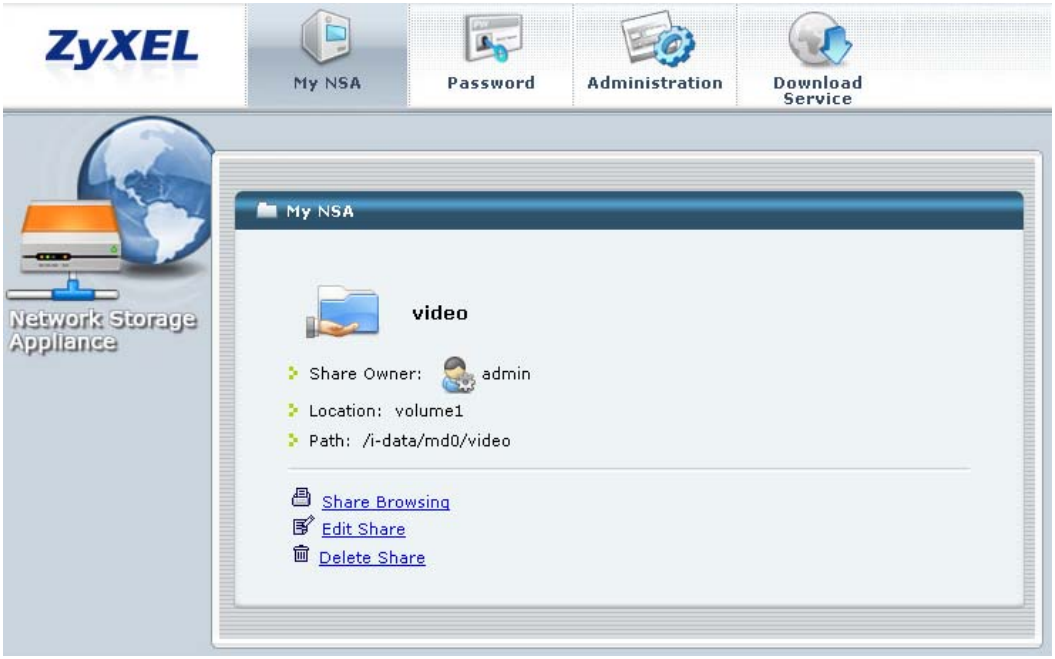
LABEL	DESCRIPTION
Shares	Select a target share from the drop-down list box.
Path	Select a folder on the NSA. You can also browse to find or create a folder on the NSA or type the location of the folder using forward slashes as branch separators.
Browse	Click this to put the file in a specific folder. Select a folder and then click **Apply**. If you click **Apply** without selecting a folder, a forward slash displays in the **Path** field. All contents within the specified share are selected. 
Yes	Click this to move or copy the file.
Close	Click this to return to the **My NSA** share browsing screen without saving.

2.5.3 My NSA Configuration Screen

Use the **My NSA** configuration screens to see and configure share management details.

Click **My NSA** and then the **Configure** button of one of your shares to open the following screen. This screen displays a share's management details.

Figure 13 My NSA Configuration Overview



The following table describes the labels in the this screen.

Table 6 My NSA Management Overview

LABEL	DESCRIPTION
Share Owner	The share belongs to (and is managed by) this user account. The share owner controls access rights to the share.
Location	The share is for a folder on this volume.
Path	This is the share's file path.
Share Browsing	Click this to see and access the share's contents.
Edit Share	Click this to configure the share's management details.
Delete Share	Click this to permanently remove the contents associated with this share or to disable the share so that no users can access it.

2.5.4 My NSA Edit Share Screen

Use this screen to configure share management details.

Click **My NSA** and a share's **Configure** button. Then click **Edit Share** to open the following screen. This screen displays a share's management details.

Figure 14 My NSA > Edit Share

The following table describes the labels in the this screen.

Table 7 My NSA > Edit Share

LABEL	DESCRIPTION
Share Name	Configure a name to identify this share. Type a share name from 1 to 255 single-byte (no Chinese characters allowed for example) ASCII characters. The name cannot be the same as another existing local share. See Section 2.5.5 on page 38 for more information on share names.
Volume	You should have already created volumes (a single accessible storage area with a single file system) on the NSA. Select the volume that you want to use with this share.
Make this share owned by	Select the administrator or user account that is to own (manage) this share. The share owner controls access rights to the share.
Enable This Share	Select this option to allow users to access this share. When this option is not selected, you cannot see and access this share.
Enable Recycle Bin	Select this option to keep deleted items in a recycle bin. When you delete an item, a recycle folder is created within the share, and the deleted item is stored in the recycle bin. Later if you want to retrieve a deleted item, you can select the item from the recycle folder and move/copy the item to another share.
Publish this share to Media Server	Select this option to make the share's files available to media clients.
Publish this share to Web	Select this option to let people use a web browser to access this share's files without logging into the My NSA screens.

Table 7 My NSA > Edit Share (continued)

LABEL	DESCRIPTION
Share Access	Select who can access the files in the share and how much access they are to be given. If you publish the share to the media server or the web, all users will have at least read-only access to the share, regardless of what you configure here. Select **Keep it private to owner** to allow only the share owner to read files in the share, delete files in the share and save files to the share. Select **Make it public** to allow anyone (with or without a user account on the NSA) to read files in the share, delete files in the share and save files to the share. Select **Advanced** to select which individual users can read the share's files, which users can delete the share's files, and which users are blocked from doing either.
Apply	Click this to save your changes.
Cancel	Click this to return to the previous screen without saving.

2.5.5 Share and Folder Names

The name can only contain the following characters:

- Alphanumeric (A-z 0-9) and Unicode.

  The NSA allows FTP access to shares, folders or files with names encoded in the UTF-8 (8-bit UCS/Unicode Transformation Format) format. So your FTP client must support UTF-8 in order to access shares, folders or files on the NSA with Unicode names.
- Spaces
- _ [underscores]
- . [periods]
- - [dashes]

Other limitations include:

- All leading and trailing spaces are removed automatically.
- Multiple spaces within names are converted to a single space.
- Share names must be unique (they cannot be the same as other share names).
- The NSA creates automatic volume names for external (USB) disk volumes. These are a type of share, so the share name you configure cannot conflict with the external (USB) disk volume names. "ExtVol1" or "ExtVol2" are examples of external (USB) disk volume names.
- Folder names must be unique (they cannot be the same as other folder names).
- The minimum character length of a name is one character, that is a name cannot be blank.
- The maximum character length of share name is 255 characters.

- Unicode is supported for share names, although your FTP client must support UTF-8. Full support should be available in all Windows versions after Windows 2000.

2.5.6 Share Paths

A share path is the full path to a folder on a volume that will be shared, for example, /mynsa/topsecret/ugs/. This is independent from a "share name" which is the name shown for this share when accessing the share via CIFS or FTP. The path should start with a '/' (forward slash) followed by a parent folder, child folders leading to the folder that is to be shared.

The share path can include all characters including unicode characters (that is, you can use Chinese folder names for example) except for the following characters:

- \ [backslash] this will be converted to forward slash and interpreted as a path delimiter
- / [forward slash] this is always interpreted as a path delimiter, so a folder cannot include it in its folder name
- : [colon]
- * [asterisk]
- ? [question mark]
- "[double quote]
- < [less than]
- > [greater than]
- | [pipe]

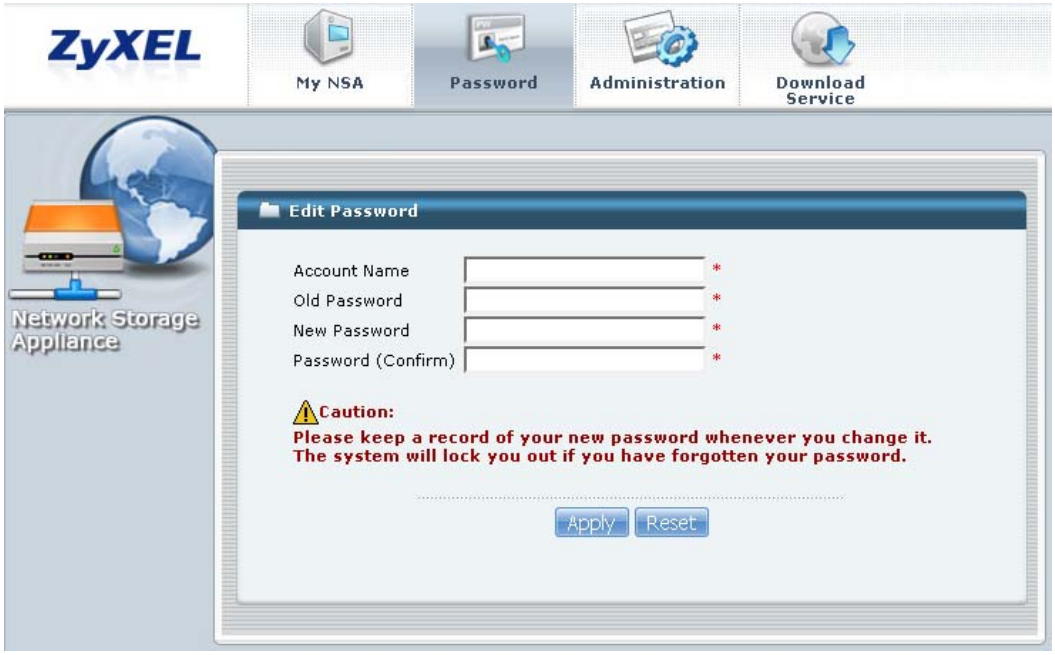
Please also note the following as regards share paths:

- If the share path is missing the root path slash (the first forward slash), the system will automatically add the initial slash.
- If the share path is missing the end trailing slash, the system will automatically add the trailing slash.
- If the share path has '\' (backslashes) instead of '/' (forward slashes) they will all be automatically converted to forward slashes.
- Share paths are case sensitive.
- The maximum share path length is 600 characters (the entire path string including slashes)
- The share path cannot be blank
- You cannot have an empty folder name, that is, two consecutive slashes (for example, '/My//Corner/')
- Each individual folder in the path (that is, the content between the slashes) cannot exceed 255 characters

2.5.7 Password Screen

Click **Password** to open the following screen. Use this screen to change an account's password. Enter a new password and confirm it by re-entering it.

Figure 15 Password



The following table describes the labels in this screen.

Table 8 Password

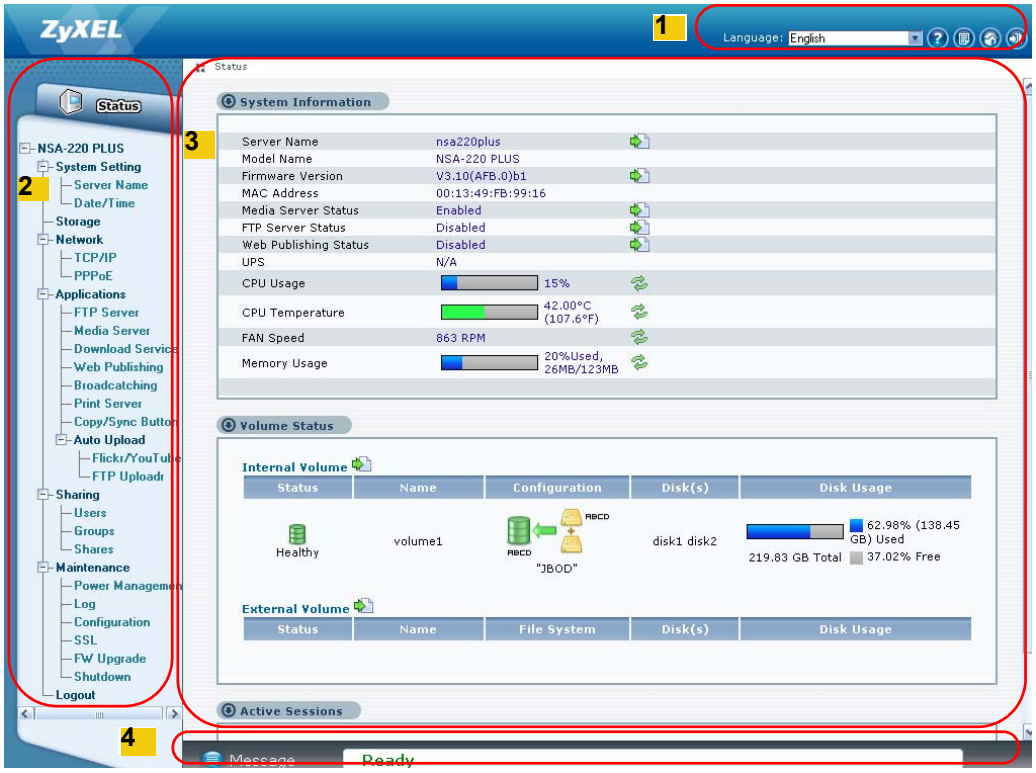
LABEL	DESCRIPTION
Account Name	Type the user name of the account for which you want to change the password.
Old Password	Type the user's current password.
New Password	Create a new password for the user. You can type from one to 14 single-byte (no Chinese characters allowed for example) ASCII characters.
Password (Confirm)	You must type the exact same password that you just typed in the above field.
Apply	Click this to save your changes.
Reset	Click this to refresh the screen.

2.6 Administration Screens

The **Administration** tab displays when you log in as the administrator. Click **Administration** in the **My NSA** screens to open the advanced administration screens.

The **Status** screen is the first advanced administration screen that displays.

Figure 16 Status



2.6.1 Global Administration Icons

The icons and language label at the top-right of the screen (1) are visible from most of the administration screens. The following table describes the 'global' icons and labels.

Table 9 Global Labels and Icons

LABEL/ ICON	DESCRIPTION
Language	Select the web configurator language from the drop-down list box.
	Help Click this to open a web help page specific to the screen you are currently configuring.

Table 9 Global Labels and Icons

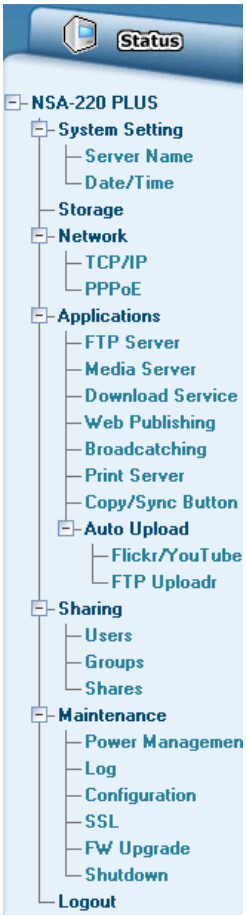
LABEL/ ICON	DESCRIPTION
	About Click this to view the model name, firmware version and copyright.
	Home Click this to return to the user-level screens.
	Logout Click this at any time to exit the web configurator. This is the same as clicking the **Logout** link at the bottom of the Navigation panel.

2.6.2 Navigation Panel

The navigation panel on the left of the screen (2) contains screen links. Click a link to display sub-links. There are no sub-links for the **Status** screen. Certain screens also contain hyper links that allow you to jump to another screen.

The following screen shows the features listed in the navigation panel.

Figure 17 Navigation Panel Links



The following table describes the navigation panel screens.

Table 10 Screens Summary

LINK	SCREEN	FUNCTION
Status		This screen shows system information, the status of the volumes, and the users who are currently using the NSA.
System Setting	Server Name	Specify the NSA's server name and workgroup name.
	Date & Time	Chose a time zone and/or allow the NSA to synchronize with a time server.
Storage		View volume and disk information and create and edit volumes. A volume is a storage area that can span one or more internal disks or a single external (USB) disk.
Network	TCP/IP	Assign the NSA a dynamic or static IP address and DNS information.
	PPPoE	Configure PPPoE settings for a direct Internet connection.
Applications	FTP	Enable FTP file transfer to/from the NSA, set the number of FTP connections allowed, an FTP idle timeout, and the character set.
	Media Server	Enable or disable the sharing of media files and select which shares to share.
	Download Service	Have the NSA handle large file downloads.
	Web Publishing	Let people use a web browser to access files in shares without logging into the My NSA screens.
	Broadcatching	Subscribe the NSA to feeds to download frequently updated digital content like TV programs, radio talk shows, Podcasts (audio files), YouTube videos, or even BitTorrents.
	Print Server	View and manage the NSA's list of printers and print jobs.
	Copy/Sync Button	Copy or synchronize files between a USB device and the NSA.
	Auto Upload - Flickr/YouTube	Upload files in selected shares to your Flickr and/or YouTube accounts.
	Auto Upload - FTP Uploadr	Upload files in selected shares to FTP servers.
Sharing	Users	View, create and edit administrator and user accounts to let people use the NSA.
	Groups	View, create and edit groups. Groups allow you to organize users into specific groups. You can create shares accessible only by the group members.
	Shares	View, create and edit shares. Shares are shared folders to which you can allow specific users read/write access rights.

Table 10 Screens Summary (continued)

LINK	SCREEN	FUNCTION
Maintenance	Power Management	Configure power saving settings for the NSA.
	Log	View the NSA's logs.
	Configuration	Back up and/or restore the NSA configuration file.
	SSL	Configure HTTPS and the NSA's SSL certificate.
	FW Upgrade	Upload new firmware to your NSA.
	Shutdown	Restart the NSA or shut it down.
Logout		Click this to exit the web configurator. This is recommended to prevent unauthorized administrator access to the NSA.

2.6.3 Main Window

The main window (3) shows the screen you select in the navigation panel. It is discussed in the rest of this document.

The **Status** screen is the first administration screen to display. See Section 2.7 on page 46 for more information about the **Status** screen.

2.6.4 Status Messages

The message text box at the bottom of the screen (4) displays status messages as you configure the NSA.

2.6.5 Common Screen Icons

The following table explains some icons that appear in several configuration screens.

Table 11 Common Configuration Screen Icons

ICON	DESCRIPTION
	Edit Click this to go to a screen where you can change the configuration settings of an entry.
	Delete Click this to delete an entry from the list.
	Edit Click this to jump to related item's configuration screen.
	Refresh Click this to refresh the data for the field or value with which it is associated.

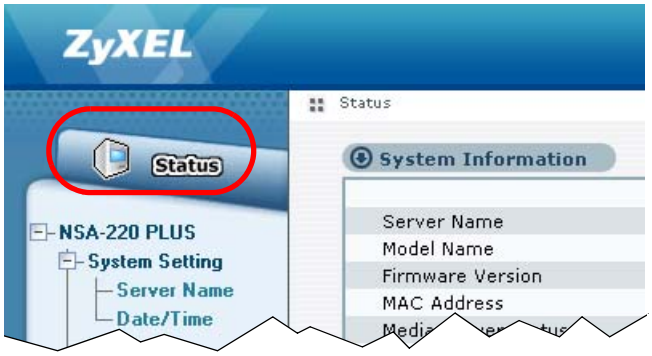
Table 11 Common Configuration Screen Icons (continued)

ICON	DESCRIPTION
	User See the chapter on user accounts for detailed information on variants of this icon.
	Share See the chapter on shares for detailed information on variants of this icon.
	Healthy This represents a healthy volume.
	Degraded This represents a degraded RAID 1 volume. Replace the faulty disk. If the replacement disk does not contain a volume, the NSA automatically restores the volume. If the replacement disk already contains a volume, you need to delete the volume and then click the **Repair** icon to fix the degraded RAID volume.
	Down This represents a down volume. Click the **Initialize** icon to create a volume.
	Scan Disk Click this to scan a hard disk for file system errors.
	Eject Click this before you remove an external hard drive so that you do not lose data that is being transferred to or from that hard drive.
	Locate Click this to cause the LED on the external storage device to blink.
	Repair If you replace a faulty disk with a disk that contains a volume, you need to delete the volume and then click this to fix the degraded RAID volume.

2.7 The Status Screen

The **Status** screen is the first main web configurator screen you see after you enter the administrator screens. To view the status screens, click **Status** on the top-left of the navigation panel.

Figure 18 Status



The following table describes the labels in this screen.

Table 12 Status

LABEL	DESCRIPTION
Status	Click this to refresh the status screen statistics.
System Information	
Server Name	This displays the name which helps you find the NSA on the network. Click the **Edit** icon to go to the screen where you can configure this.
Model Name	This displays which model this NSA device is.
Firmware Version	This is the NSA firmware version. Click the **Edit** icon to go to the **Maintenance > FW Upgrade** screen from which you can upload new firmware.
MAC Address	This displays the NSA's unique physical hardware address (MAC). You need the MAC address to register the product at myZyXEL.com. Customer support may also request it for troubleshooting purposes.
Media Server Status	This shows whether the media server function is enabled or disabled. It must be enabled for media clients to play content files stored on the NSA. Click the **Edit** icon to go to the screen where you can configure this.
FTP Server Status	This shows whether the FTP server function is enabled or disabled. It must be enabled to use FTP file transfer to/from the NSA. Click the edit icon to go to the screen where you can configure this.
Web Publishing Status	This shows whether the Web server function is enabled or disabled. It must be enabled to use HTTP to access shares on the NSA. Click the **Edit** icon to go to the screen where you can configure this.

Table 12 Status (continued)

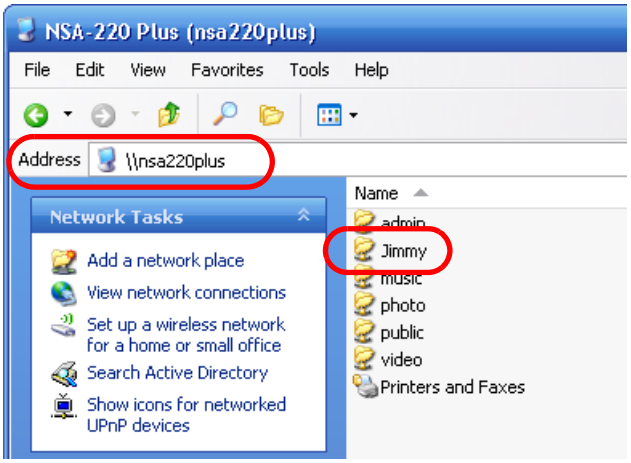
LABEL	DESCRIPTION
UPS	This shows the Uninterruptible Power Supply (UPS) capacity. Click the **Edit** icon to go to the screen where you can configure this.
CPU Usage	This displays a summary of CPU usage by all current processes. Click the **Refresh** icon to update this display. It also automatically updates itself every 10 seconds. Note: If too many users are using the NSA then the NSA may appear sluggish.
CPU Temperature	This displays the current temperature near the NSA's CPU. The NSA generates an emergency log if the temperature goes out of the normal operating range. If the temperature goes even higher, the NSA shuts down automatically to avoid damage from overheating. If the NSA overheats, make sure the fans are working and it is in a well ventilated place. Click the **Refresh** icon to update this display. It also automatically updates itself every 60 seconds.
Fan Speed	This is the RPM (Rotations Per Minute) of the NSA's fans. Click the **Refresh** icon to update this display. It also automatically updates itself every 60 seconds.
Memory Usage	This shows how much of the NSA's total memory is being used. Click the **Refresh** icon to update this display. It also automatically updates itself every 10 seconds.
Volume Status	A volume is a storage area on a single disk or spread across a number of disks within a single file system.
Internal Volume	This displays the volumes created on the hard drives installed in the NSA. Click the **Edit** icon to open the **Storage** screen. You can create and edit the NSA's internal volume. See Chapter 5 on page 111 for more details.
External Volume	This displays the volumes created on USB hard drives connected to the NSA. USB disks are numbered in the order that you insert USB devices. Click the **Edit** icon to open the **Storage** screen. You can create and edit the external volume. See Chapter 5 on page 111 for more details.
Status	This icon indicates whether the volume is healthy, degraded, or down.
Name	This field shows the name for the volume. Read only displays for an external volume that uses Windows NTFS. This means the NSA can read the volume but can't save files on it.
Configuration	This field (also known as **Type**) shows what type of data storage system (a RAID type or JBOD) an internal volume is using.
File System	This field shows what file system an external (USB) volume is using.

Table 12 Status (continued)

LABEL	DESCRIPTION
Disk(s)	For internal drives, this shows which hard drive bays are included in the volume. For external drives, this field shows **USB1** for the first external hard drive you connect to the NSA (regardless of which USB port) and **USB2** for the second.
Disk Usage	This field shows total disk size, the percentage of the disk being used and the percentage that is available.
Active Sessions	This shows how many users are currently connected to the NSA.
Type	This shows whether it's a Windows/CIFS, web (web configurator), or FTP connection to the NSA.
Share Name	This displays the shared folder name on the NSA that the user is connected to for CIFS sessions and is blank for FTP sessions.
Username	This displays the name of the user connected to the NSA if one is defined. **ANONYMOUS FTP** displays if a username is not defined for the user's connection.
Connected At	This displays the date and time the user last connected to the NSA in year, month, day, hour, minute, second format.
IP Address	This displays the IP address of the computer connected to the NSA.

2.7.1 Session Example (Windows)

Open Windows Explorer and type two back slashes followed by the NSA name or IP address. Initially you can only read and write to the **Public**, **Video**, **Music**, and **Photo** folders until you create other shares on the NSA. This session is then displayed as shown in the following figure.



3

Tutorials

3.1 Overview

This chapter provides tutorials that show how to use the NSA.

- File Sharing Tutorials, see page 49
- Download Service Tutorial, see page 59
- Broadcatching Tutorial, see page 75
- Copy and Flickr Auto Upload Tutorial, see page 80
- FTP Uploadr Tutorial, see page 82
- Web Configurator's Security Sessions, see page 86
- Using FTPS to Connect to the NSA, see page 98
- Using a MAC to Access the NSA, see page 99

3.2 File Sharing Tutorials

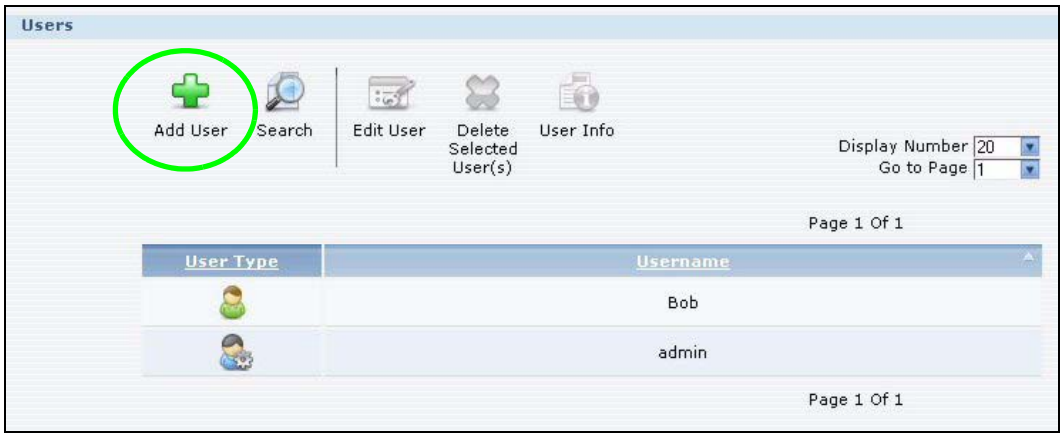
The following sections cover using the NSA for file sharing. This chapter assumes you have already followed the Quick Start Guide instructions to perform initial setup and configuration (so you have a working volume). See the rest of this User's Guide for details on configuring the NSA's various screens.

3.2.1 Creating a User Account

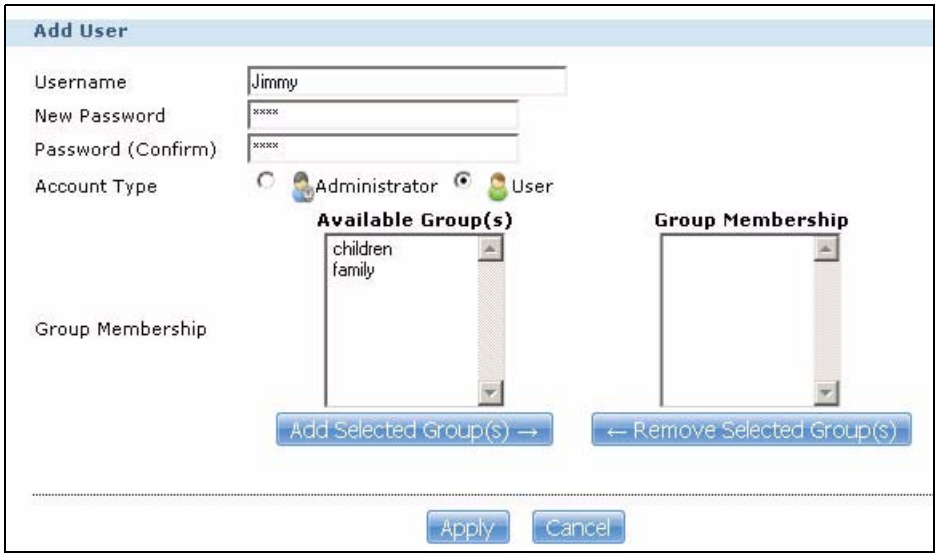
Bob wants to create accounts for his sons Jimmy and Kevin. This is how he would do it.

1 Log into the NSA web configurator (see Section 2.3 on page 29) and click **Administration** to go to the configuration screens.

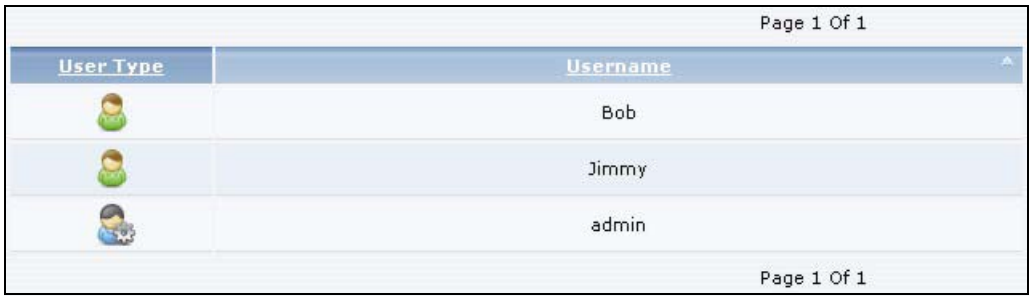
2 Click **Sharing** > **Users** to open the **Users** screen. Then click **Add User.**



3 Configure the screen as follows and write down the username and password to give to Jimmy. If the username and password are the same as Jimmy's Windows login, Jimmy will not need to enter a username and password when he logs into his share from his computer. Set the **Account Type** to **User** so Jimmy doesn't get to configure the whole NSA. Click **Apply** to create the account.



4 The account now displays in the **Users** screen.



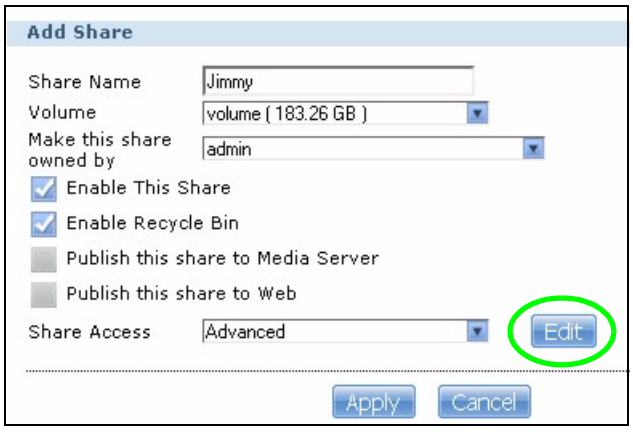
Now that Bob has created Jimmy's account, he can go through the steps again to create another account for Kevin. After both accounts are created, he can go to Section 3.2.2 on page 52 to create shares for Jimmy and Kevin.

3.2.2 Creating a Share

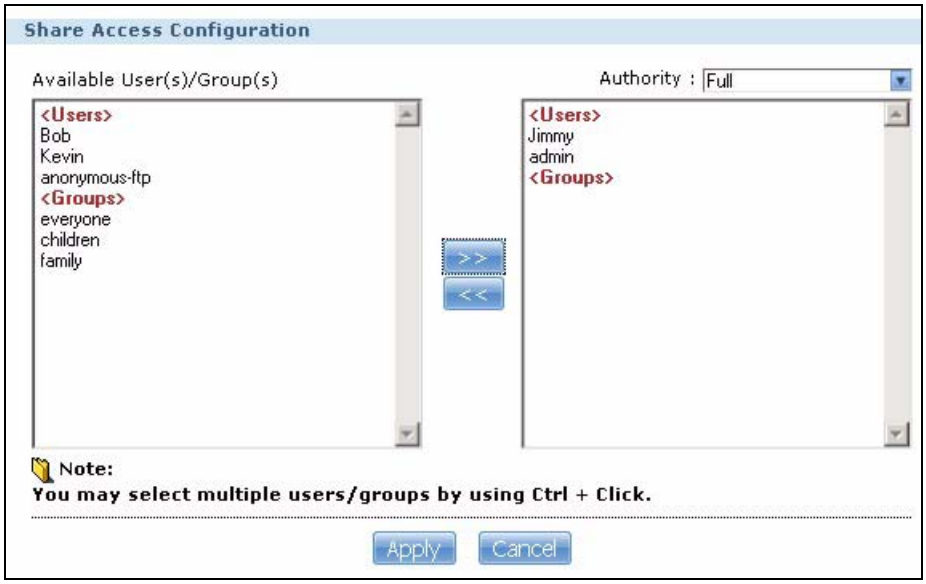
Suppose Bob has already created separate accounts for his sons Jimmy and Kevin. Now Bob wants to create a share for each son. He also wants to make sure that each son can only access his own share (to keep them from deleting each other's files). This is how he would do it.

1 In the NSA's administration web configurator screens, click **Shares > Add Share**. Click **Add Share** to create a new share.

2 Specify a name for the share and select which volume it should be on. Configure the screen as follows. Then click **Edit**.



3 Configure the screen as follows to give Jimmy full access right to the share. Then click **Apply** to create the share.



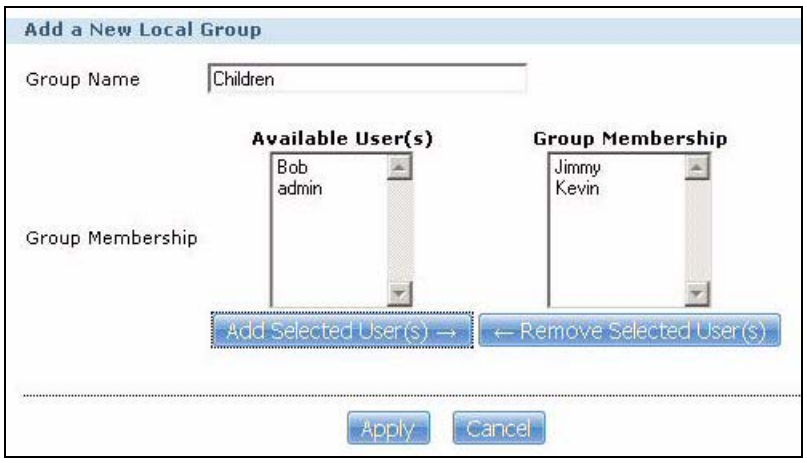
Now that Bob has created Jimmy's share, he can go through the steps again to create another share for Kevin.

3.2.3 Creating a Group

After creating user accounts for Jimmy and Kevin, Bob wants to create a group for his sons and another one for the parents. Bob can assign access rights to his sons' group for certain shares such as a cartoons share and allow only the parents' group to access the scary moview share. This is how he would create the group.

1 In the NSA's administration web configurator screen, click **Groups** > **Add Group**.

2 Specify a name for the group. Select the user(s) you want to add to the group from the **Available User(s)** list and click **Add Selected User(s)**. Configure the screen as follows. Then click **Apply** to create the group.



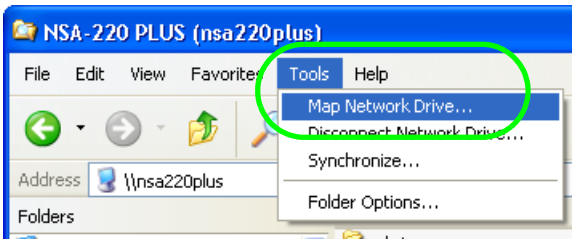
Now that Bob has created a group for Jimmy and Kevin, he can go through the steps again to create another group for the parents. Then he can see the rest of the tutorials for how to use the groups in assigning access rights to shares.

3.2.4 Accessing a Share From Windows Explorer

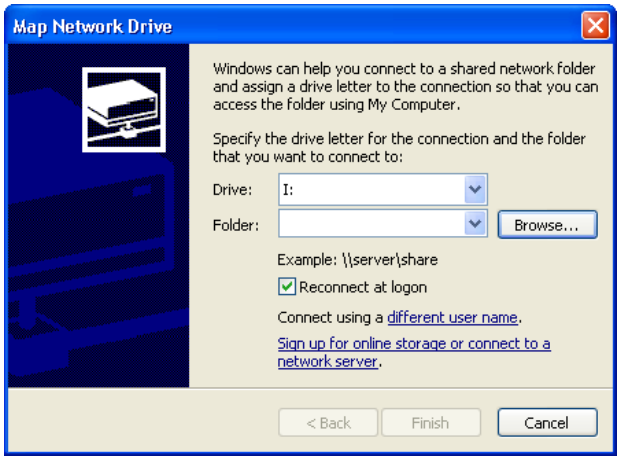
If you map a NSA share (where data is stored) to a Windows network drive, you can use Windows Explorer to transfer files to and from the NSA as if it was another folder on your computer. Here he maps Jimmy's share to Jimmy's computer.

1 Start Windows Explorer and go to the NSA's server name ("nsa220plus" is the default) or IP address.

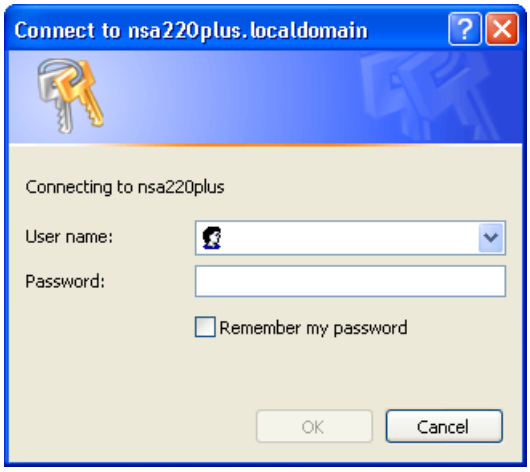
2 Click **Tools > Map Network Drive**.



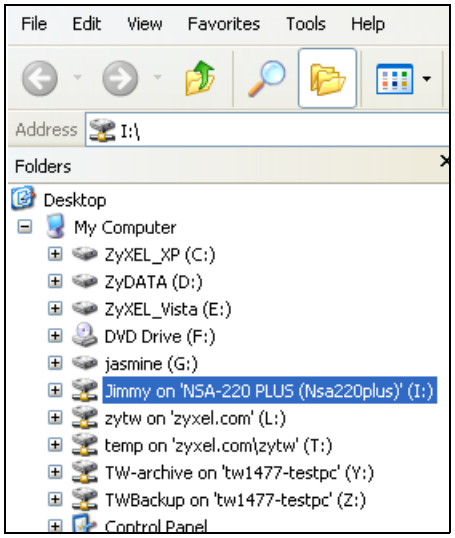
3 Select the network drive that you want to map the NSA to from the **Drive** list box. This example uses **I**. Then browse to and select the share on the NSA. Click **Finish**.


Map Network Drive
Windows can help you connect to a shared network folder and assign a drive letter to the connection so that you can access the folder using My Computer.
Specify the drive letter for the connection and the folder that you want to connect to:
Drive:
I:
Folder:
Browse...
Example: \\server\share
Reconnect at logon
Connect using a different user name.
Sign up for online storage or connect to a network server.
< Back
Finish
Cancel

4 Enter the username and password for Jimmy's account and click **OK**. You do not need to do this if the username and password are the same as Jimmy's Windows login.



5 After the mapping is done, you can then simply copy and paste or drag and drop files from/to your local computer's drives to or from this network folder. Just like the NSA's share was another folder on your computer.

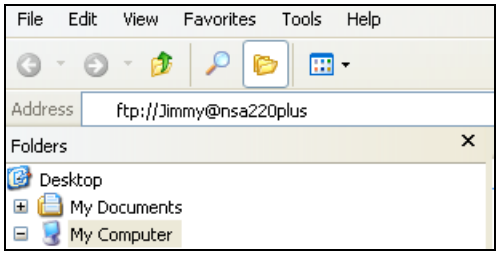


Now that Bob has mapped Jimmy's share to Jimmy's computer, he can go through the steps again to map Kevin's share to Kevin's computer.

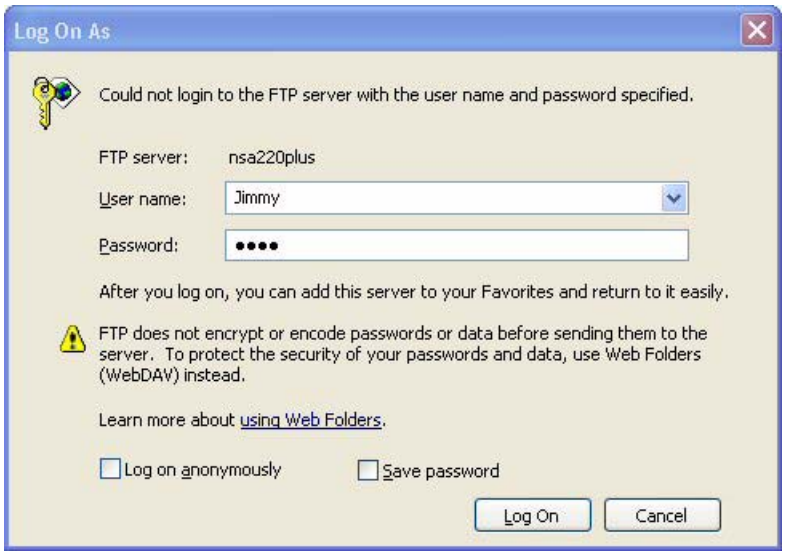
3.2.5 Accessing a Share Using FTP

You can also use FTP to access the NSA. Suppose Jimmy is temporarily using a different computer and wants to access his share without mapping it to the computer. This is how he would do it.

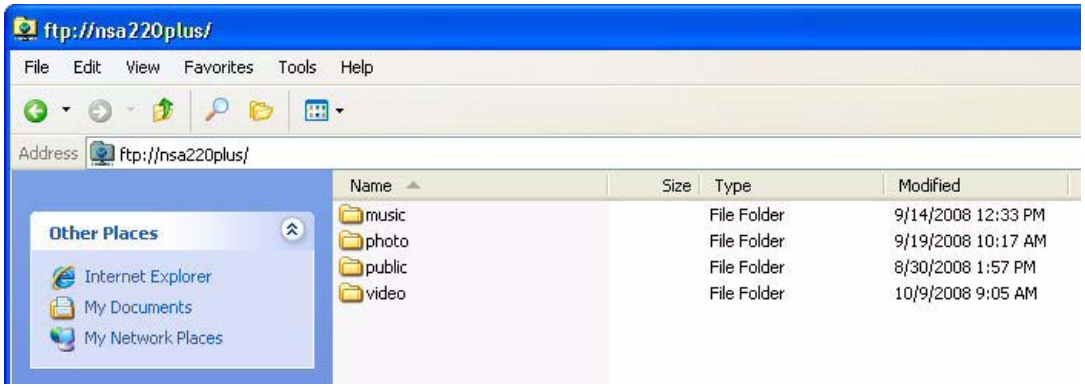
1 Open the FTP client (Windows Explorer is used here) and type "ftp://username@server" where "username" is the account's username and "server" is the NSA's IP address or server name.



2 Enter your password and click **Login**.


Log On As
Could not login to the FTP server with the user name and password specified.
FTP server: nsa220plus
User name: Jimmy
Password: ••••
After you log on, you can add this server to your Favorites and return to it easily.
FTP does not encrypt or encode passwords or data before sending them to the server. To protect the security of your passwords and data, use Web Folders (WebDAV) instead.
Learn more about using Web Folders.
Log on anonymously
Save password
Log On
Cancel

3 Now you can access files and copy files from/to your local computer's drives to or from this network folder.

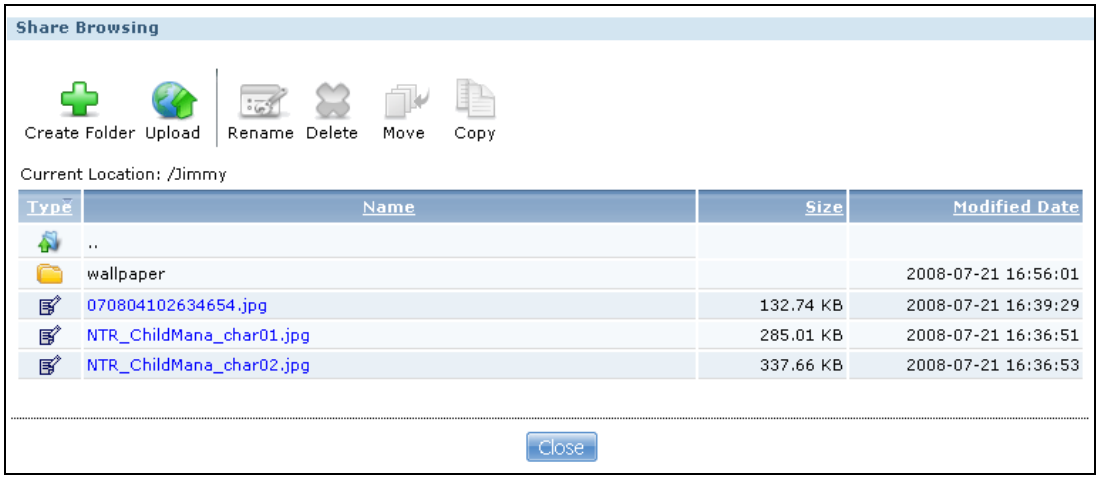


3.2.6 Accessing a Share Through the Web Configurator

You can browse and access files through the web configurator.

1 Log into the NSA web configurator (see Section 2.3 on page 29) using your username and password. Click a share to see the top level of the share's contents.

2 Here is the Jimmy share.



3 Click a folder's file name to browse the folder. You can open files or copy them to your computer. You can also create new folders and upload additional files to the share.

4 Click the logout icon when your are done.

3.3 Download Service Tutorial

This tutorial covers using the NSA to download a file from the Internet. Use this same procedure for BitTorrent downloads as well as regular HTTP (web) and FTP downloads. See Section 7.4.1 on page 138 for more on the download service.

3.3.1 Copying/Pasting a Download Link

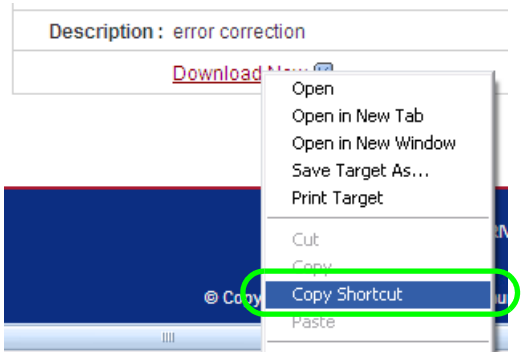
1 Open your Internet browser (this example uses Internet Explorer).

2 Find a download link for the file you want. In this example, www.zyxel.com has a **Download Now** link for downloading a datasheet for ZyXEL's GS-2024 (a device for making phone calls over the Internet).

Note: Make sure the link opens either the file you want or a pop-up window about how to handle the file.

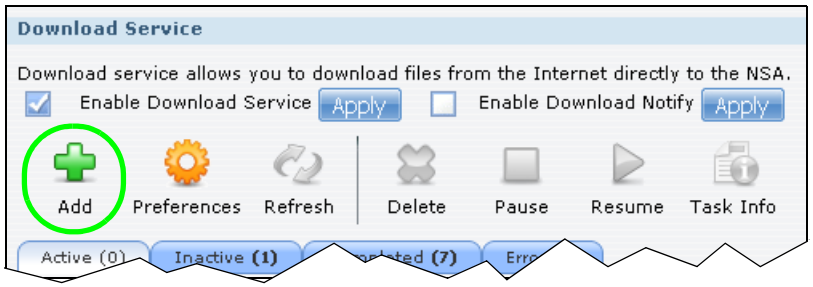
Note: It is also OK for the link to open a .torrent file. If you are redirected to a screen that says the download should start in a few seconds, there may be a link to click if the download does not start automatically. See if that link opens the file or the pop-up window.

3 Right-click the download link and select **Copy Shortcut** in Internet Explorer (or **Copy Link Location** in Firefox).

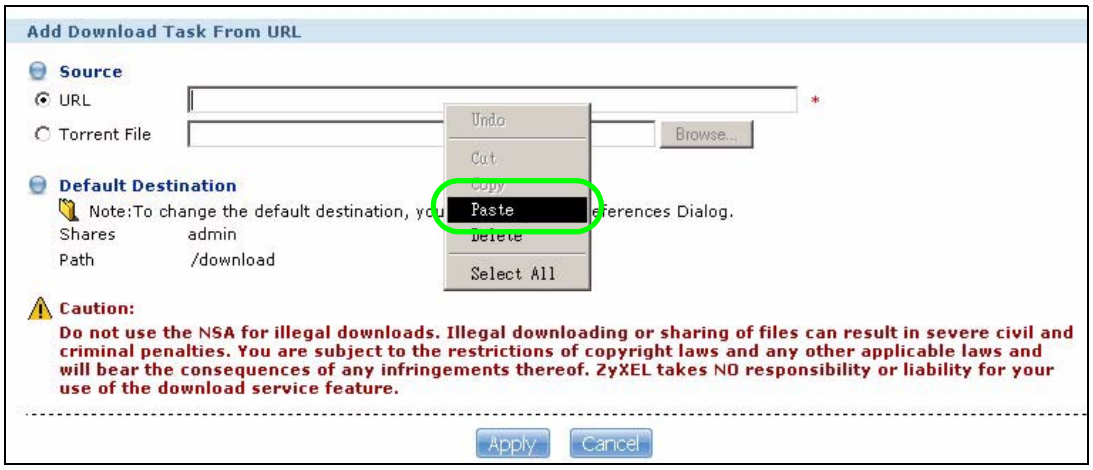


4 Log into the NSA web configurator (see Section 2.3 on page 29) using the administrator account and click **Download Service**.

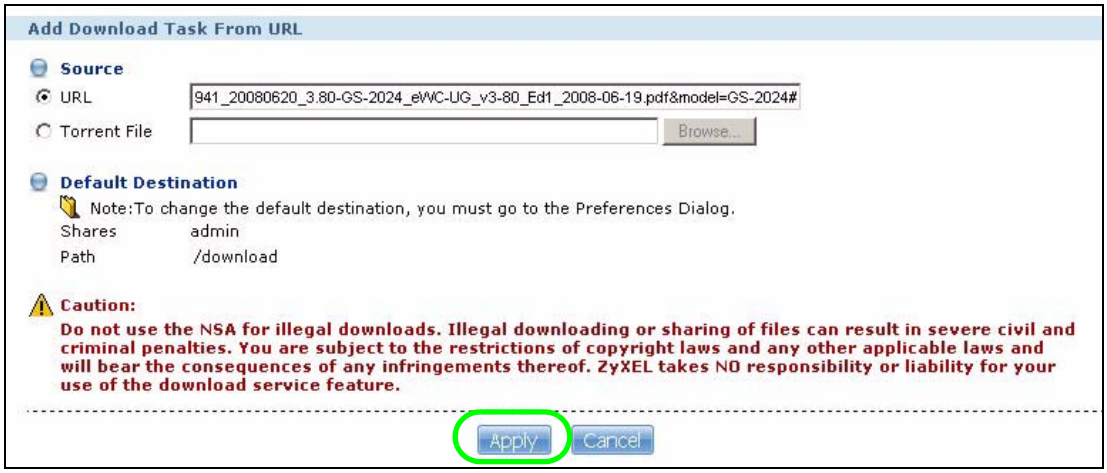
5 Click **Add**.



6 Right-click the **URL** field and select **Paste**.


Add Download Task From URL
Source
URL
Torrent File
Browse...
Undo
Cut
Copy
Paste
Delete
Select All
Default Destination
Note:To change the default destination, you
ferences Dialog.
Shares admin
Path /download
Caution:
Do not use the NSA for illegal downloads. Illegal downloading or sharing of files can result in severe civil and criminal penalties. You are subject to the restrictions of copyright laws and any other applicable laws and will bear the consequences of any infringements thereof. ZyXEL takes NO responsibility or liability for your use of the download service feature.
Apply
Cancel

7 The URL displays in the **URL** field. Click **Apply**.


Add Download Task From URL
Source
URL
941_20080620_3.80-GS-2024_eWC-UG_v3-80_Ed1_2008-06-19.pdf&model=GS-2024#
Torrent File
Browse...
Default Destination
Note:To change the default destination, you must go to the Preferences Dialog.
Shares admin
Path /download
Caution:
Do not use the NSA for illegal downloads. Illegal downloading or sharing of files can result in severe civil and criminal penalties. You are subject to the restrictions of copyright laws and any other applicable laws and will bear the consequences of any infringements thereof. ZyXEL takes NO responsibility or liability for your use of the download service feature.
Apply
Cancel

8 After a few moments, the download task appears in the **Download Service** screen's **Active** tab.

The download appears in the **Completed** tab when it is done. By default the NSA stores all downloads in the **admin** share's **download** folder. See Section 3.2.4 on page 54, Section 3.2.5 on page 56, or Section 3.2.6 on page 58 for how to access a share.

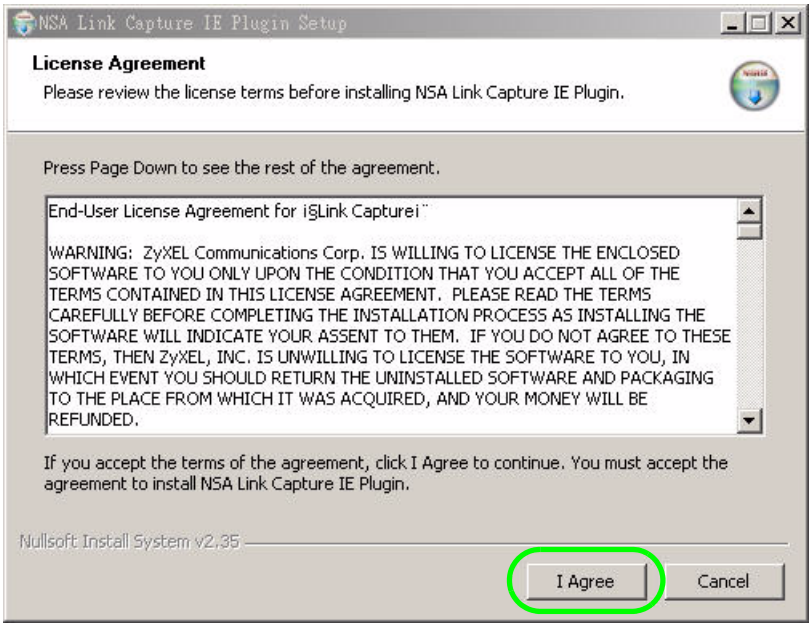
3.3.2 Installing the Link Capture Browser Plugin

In addition to copying and pasting a download link to the **Download Service** screen, you can also install a link capture browser plugin in your web browser. Use the plugin to easily add a download link to the NSA's download service. See Section 7.4.4 on page 143 for more on the link capture browser plugin.

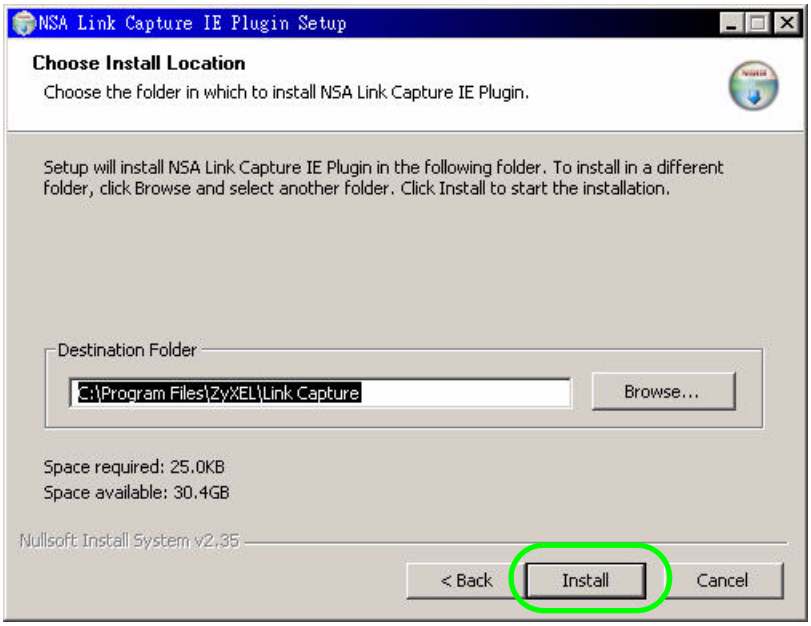
Internet Explorer

1 Open the folder containing the link capture browser plugin.

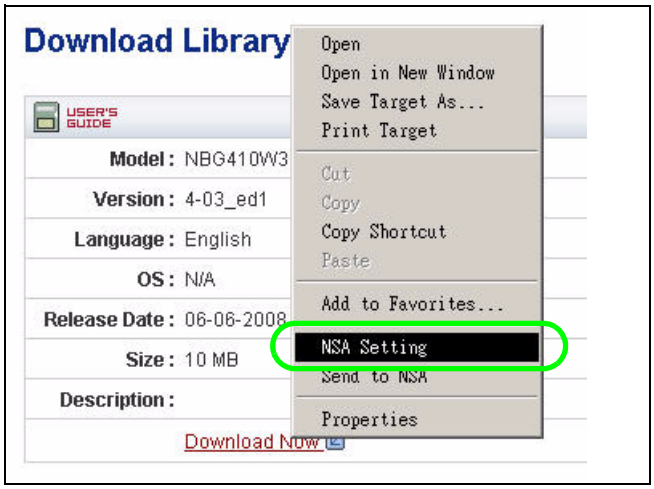
2 Double-click on the plugin to display the following screen. Click **I Agree** to begin installation.


NSA Link Capture IE Plugin Setup
License Agreement
Please review the license terms before installing NSA Link Capture IE Plugin.
Press Page Down to see the rest of the agreement.
End-User License Agreement for i§Link Capturei¨
WARNING: ZyXEL Communications Corp. IS WILLING TO LICENSE THE ENCLOSED SOFTWARE TO YOU ONLY UPON THE CONDITION THAT YOU ACCEPT ALL OF THE TERMS CONTAINED IN THIS LICENSE AGREEMENT. PLEASE READ THE TERMS CAREFULLY BEFORE COMPLETING THE INSTALLATION PROCESS AS INSTALLING THE SOFTWARE WILL INDICATE YOUR ASSENT TO THEM. IF YOU DO NOT AGREE TO THESE TERMS, THEN ZyXEL, INC. IS UNWILLING TO LICENSE THE SOFTWARE TO YOU, IN WHICH EVENT YOU SHOULD RETURN THE UNINSTALLED SOFTWARE AND PACKAGING TO THE PLACE FROM WHICH IT WAS ACQUIRED, AND YOUR MONEY WILL BE REFUNDED.
If you accept the terms of the agreement, click I Agree to continue. You must accept the agreement to install NSA Link Capture IE Plugin.
Nullsoft Install System v2.35
I Agree
Cancel

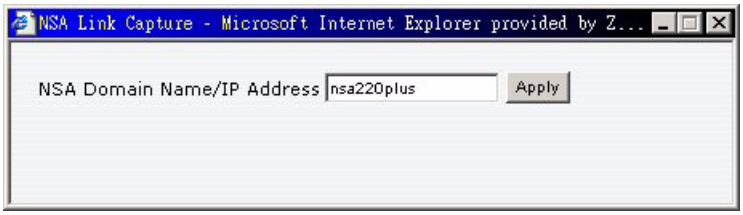
3 Select a location to save the plugin and click **Install**. Close the screen once the installation is complete.


NSA Link Capture IE Plugin Setup
Choose Install Location
Choose the folder in which to install NSA Link Capture IE Plugin.
Setup will install NSA Link Capture IE Plugin in the following folder. To install in a different folder, click Browse and select another folder. Click Install to start the installation.
Destination Folder
C:\Program Files\ZyXEL\Link Capture
Browse...
Space required: 25.0KB
Space available: 30.4GB
Nullsoft Install System v2.35
< Back
Install
Cancel

4 Open Internet Explorer and locate a download link. In this example, www.zyxel.com has a **Download Now** link for downloading a user's guide for ZyXEL's NBG410W3G (a 3G wireless router). Right-click on the download link and select **NSA Setting**.



5 Enter the NSA's web address (nsa220plus by default) and click **Apply**. A warning message displays asking for confirmation. Click **OK** to apply the setting.

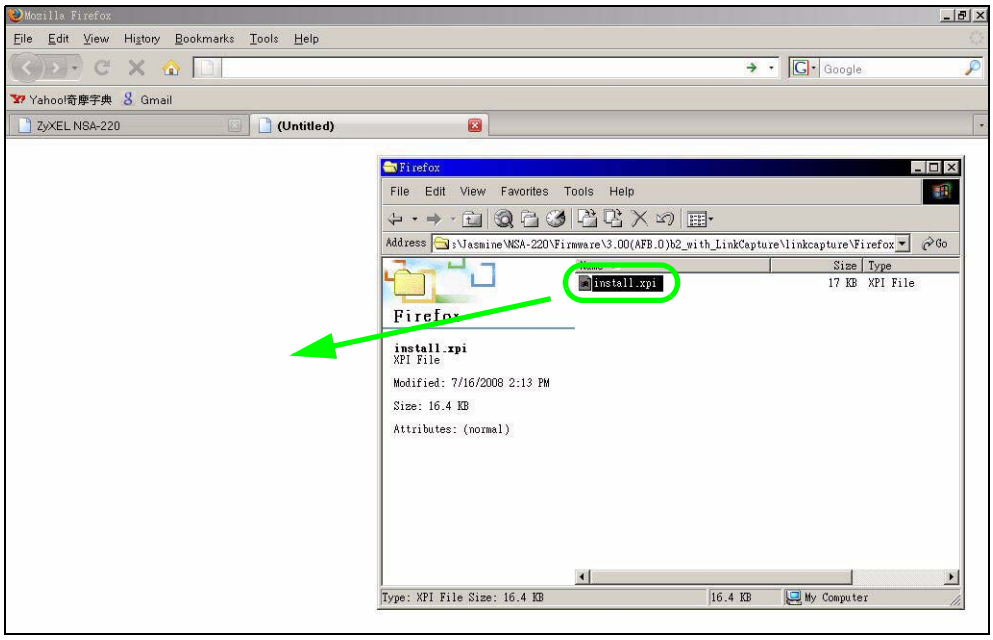


Firefox

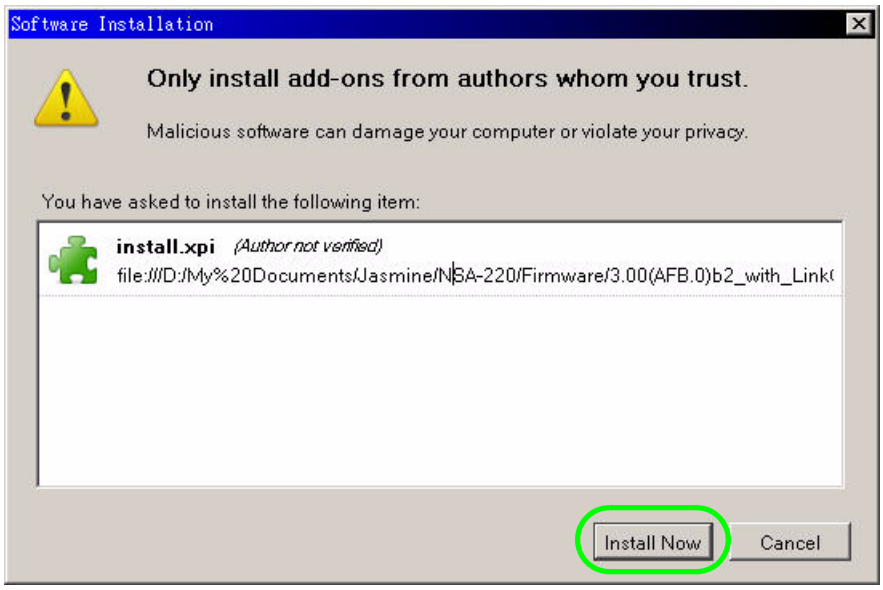
1 Open Firefox.

2 Open the folder containing the link capture browser plugin.

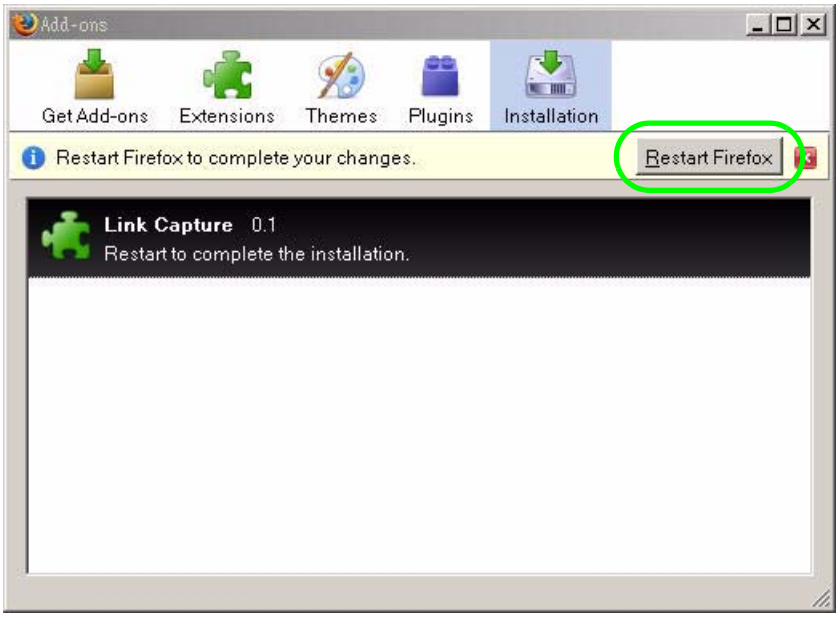
3 To install the plugin, drag and drop the plugin to Firefox.



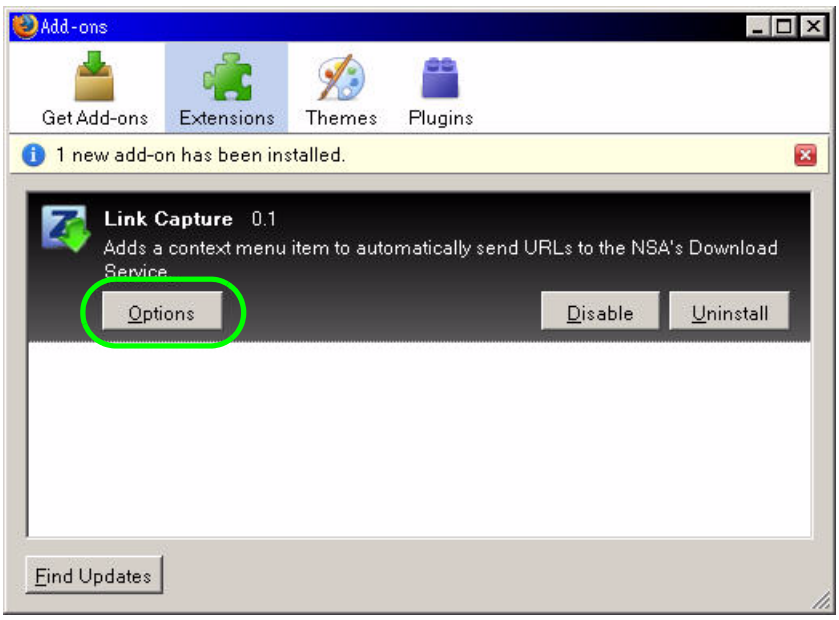
4 The following screen displays. Click **Install Now**.


Software Installation
Only install add-ons from authors whom you trust.
Malicious software can damage your computer or violate your privacy.
You have asked to install the following item:
install.xpi (Author not verified)
file:///D:/My%20Documents/Jasmine/NSA-220/Firmware/3.00(AFB.0)b2_with_Link(
Install Now
Cancel

5 You need to restart Firefox after the installation.



6 When Firefox restarts, a message displays to show the installation succeeded. The plugin is installed as an extension in Add-ons. Click **Options** to configure the NSA's web address.



7 Enter the NSA's web address (nsa220plus by default) and click **OK**.

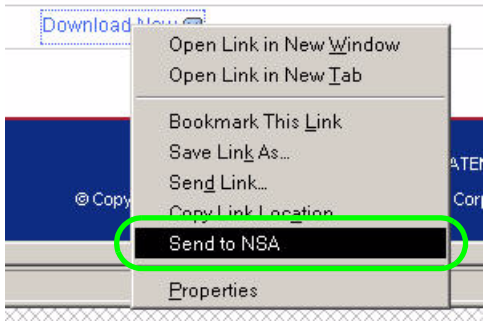
3.3.3 Using the Link Capture Browser Plugin

Once you install the plugin, you may begin sending download links to the NSA from your web browser. This example shows how to send a download link to the NSA's download service using the link capture browser plugin.

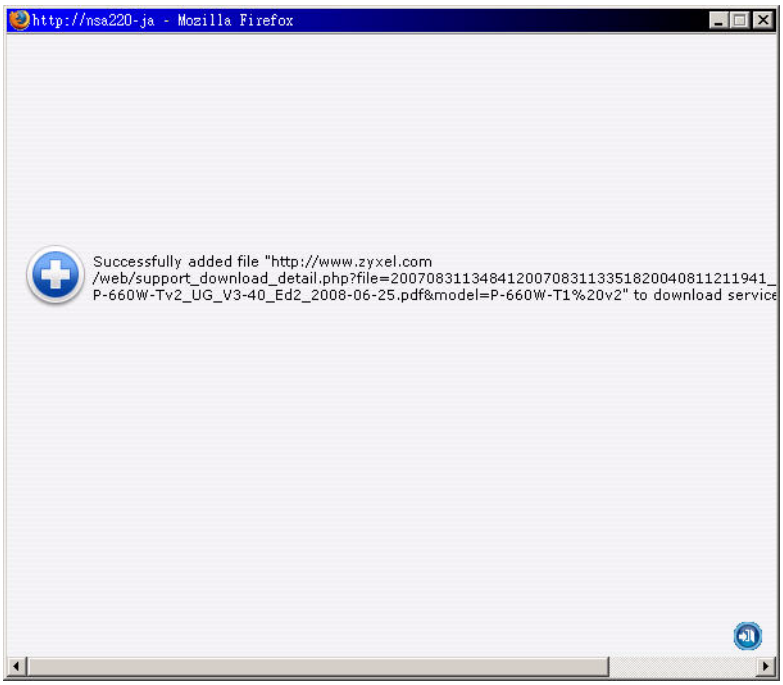
1 Open your Internet browser (this example uses Firefox).

2 Find a download link for the file you want. In this example, www.zyxel.com has a **Download Now** link for downloading a user's guide for ZyXEL's P-660W-T1 (an ADSL router).

3 Right-click on the download link and select **Send to NSA**.



4 The login screen shows up. Enter your NSA's login information and click **Login** to send the link to the download service. A confirmation message displays.



5 Log into the NSA web configurator (see Section 2.3 on page 29) using the administrator account and click **Download Service**.

6 The download task appears in the **Download Service** screen's **Active** tab. It may appear in the **Completed** tab if the NSA already finished downloading the file.

By default the NSA stores all downloads in the **admin** share's **download** folder. See Section 3.2.4 on page 54, Section 3.2.5 on page 56, or Section 3.2.6 on page 58 for how to access a share.

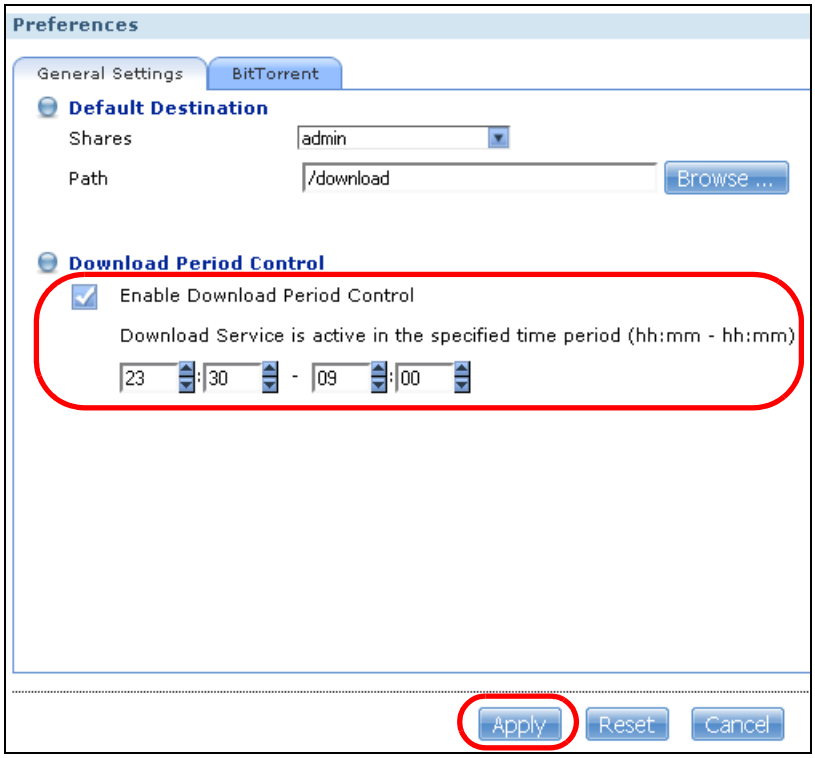
3.3.4 Configuring the Download Service Preferences

Once you added a list of download tasks to the NSA (see Section 3.3.1 on page 59 and Section 3.3.3 on page 67), you can have the NSA download files during a specific time period of the day. You can also configure the BitTorrent settings to control bandwidtch and optimize download efficiency.

Say you have the NSA turned on all the time, but you only want the NSA download files at night. Here is how you use the download period control feature to set the time range.

1 Click **Applications** > **Download Service** > **Preferences** to open the **General Settings** screen.

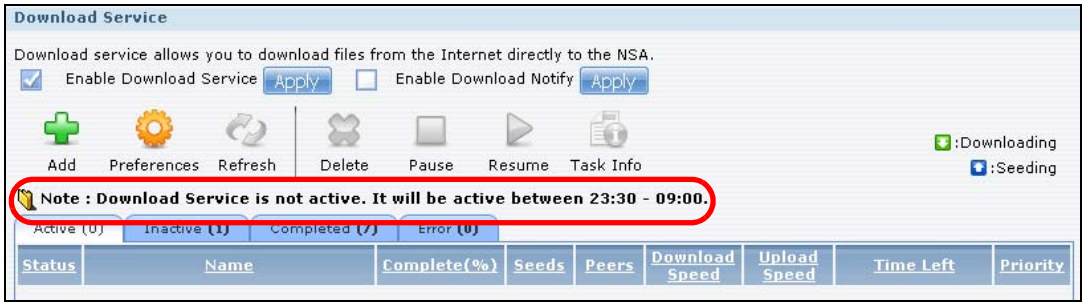
2 Select **Enable Download Period Control** and use the arrows to adjust the time period from 23:30 to 09:00. Click **Apply** to save your changes. The NSA only downloads files within this 9.5-hour period every day.



Note: If you configure the **Power On/Off Schedule** feature in the **Power Management** screen, make sure your active download period does not conflict with the power-off period.

Note: If power failure occurs during the active download period, the NSA will verify whether the downloaded files were damaged. If a file is corrupted, the NSA will download the file again. If the file is intact but not completely downloaded, the NSA will resume the download task after it restarts.

3 When it is not the download time, you see a message in the **Download Service** screen, indicating the active download period.



Here is a list of BitTorrent settings you want to configure for your NSA:

- Limit the maximum upload rate to 20 KB/s.

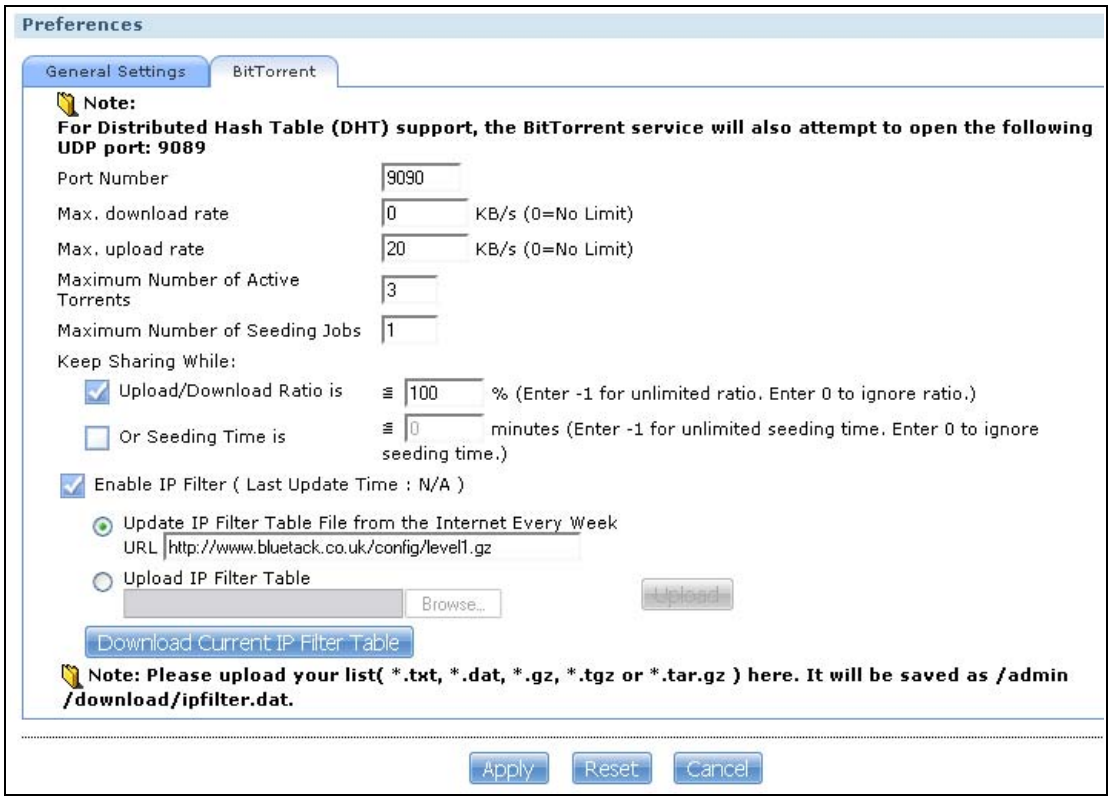
  Enter this value in the **Max. upload rate** field.
- Actively download three torrent files but only upload one at a time.

  Enter 3 in the **Maximum Number of Active Torrents** field and enter 1 in the **Maximum Number of Seeding Jobs** field.
- Keep sharing until the NSA has shared equal or greater amount of the downloaded files.

  Select the check box and enter 100 in the **Upload/Download Ratio** field.
- Use an online IP filter table from http://www.bluetack.co.uk/config/level1.gz for example to protect BitTorrent downloads.

  Enter the URL in the **Update IP Filter from the Internet Every Week** field.

Click **Applications** > **Download Service** > **Preferences** > **BitTorrent** to open the following screen. Enter the above information and then click **Apply**.


Preferences
General Settings
BitTorrent
Note:
For Distributed Hash Table (DHT) support, the BitTorrent service will also attempt to open the following UDP port: 9089
Port Number
9090
Max. download rate
0
KB/s (0=No Limit)
Max. upload rate
20
KB/s (0=No Limit)
Maximum Number of Active Torrents
3
Maximum Number of Seeding Jobs
1
Keep Sharing While:
Upload/Download Ratio is
100
% (Enter -1 for unlimited ratio. Enter 0 to ignore ratio.)
Or Seeding Time is
0
minutes (Enter -1 for unlimited seeding time. Enter 0 to ignore seeding time.)
Enable IP Filter (Last Update Time : N/A)
Update IP Filter Table File from the Internet Every Week
URL
http://www.bluetack.co.uk/config/level1.gz
Upload IP Filter Table
Browse...
Upload
Download Current IP Filter Table
Note: Please upload your list(*.txt, *.dat, *.gz, *.tgz or *.tar.gz) here. It will be saved as /admin /download/ipfilter.dat.
Apply
Reset
Cancel

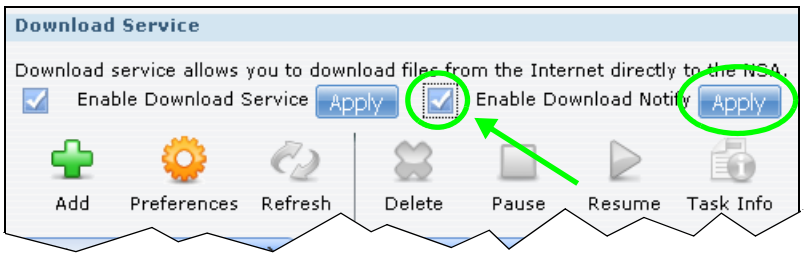
3.3.5 Using Download Service Notification

Use an RSS feed reader on your computer to keep track of files the NSA has downloaded. The following examples show how to subscribe to the NSA's download service notifications. See Section 7.4.5 on page 144 for more on download service notifications.

Some RSS readers may not support the NSA's download service notifications. For example, Google Reader cannot support this feature if the NSA has a private IP address.

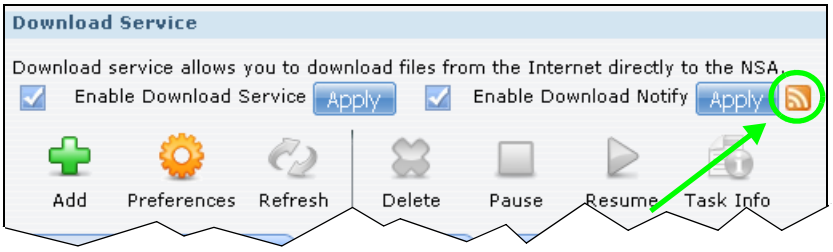
Note: It is recommended to subscribe to the download service notifications using the built-in reader in Internet Explorer 7 or Firefox.

You have to activate this feature in the **Download Service** screen. Click **Applications** > **Download Service** to open the following screen. Select **Enable Download Notify** and click **Apply**.

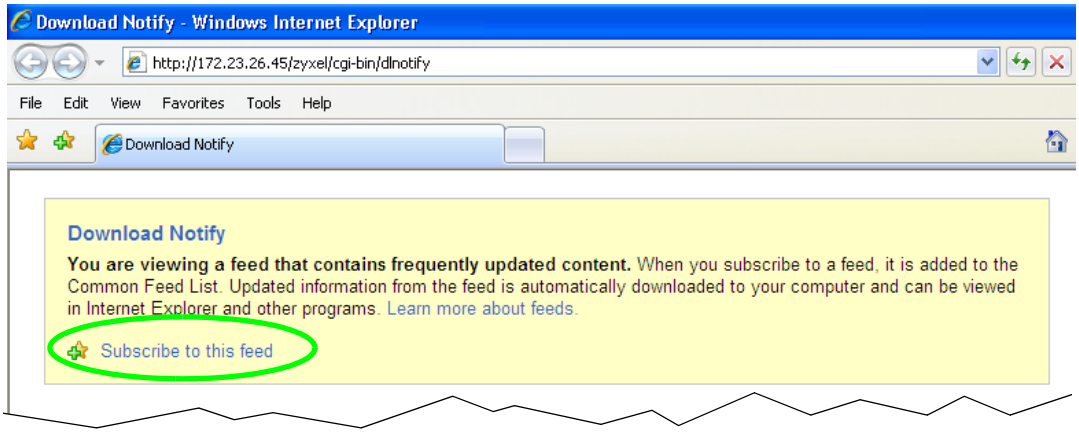


Internet Explorer 7 Example

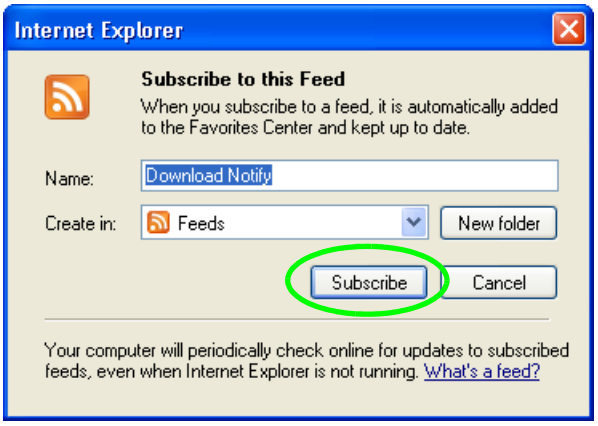
1 After you activate download service notification, click the **RSS** feed icon.



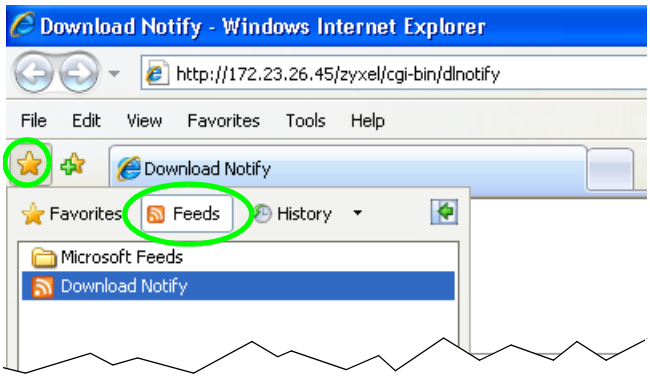
2 The following screen displays. Select **Subscribe to this feed**.


Download Notify - Windows Internet Explorer
http://172.23.26.45/zyxel/cgi-bin/dlnotify
File Edit View Favorites Tools Help
Download Notify
Download Notify
You are viewing a feed that contains frequently updated content. When you subscribe to a feed, it is added to the Common Feed List. Updated information from the feed is automatically downloaded to your computer and can be viewed in Internet Explorer and other programs. Learn more about feeds.
Subscribe to this feed

3 The following screen displays. Click **Subscribe**.

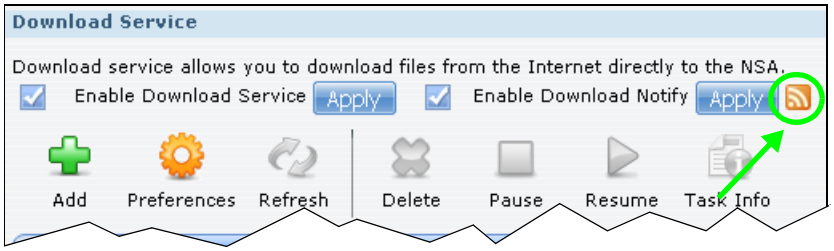

Internet Explorer
Subscribe to this Feed
When you subscribe to a feed, it is automatically added to the Favorites Center and kept up to date.
Name:
Download Notify
Create in:
Feeds
New folder
Subscribe
Cancel
Your computer will periodically check online for updates to subscribed feeds, even when Internet Explorer is not running. What's a feed?

4 Click the **Favorite** icon on your browser and select the **Feeds** tab to check the updates of your NSA's download list.

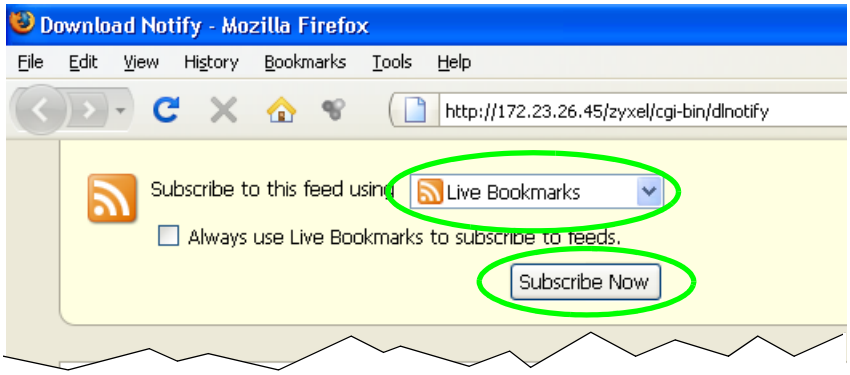


Firefox Example

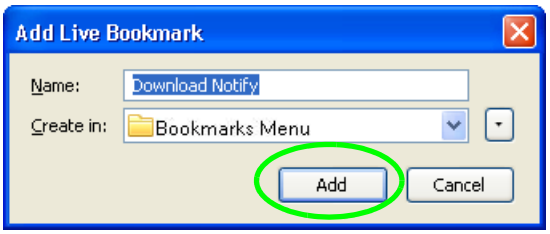
1 After you activate download service notification, click the **RSS** feed icon.



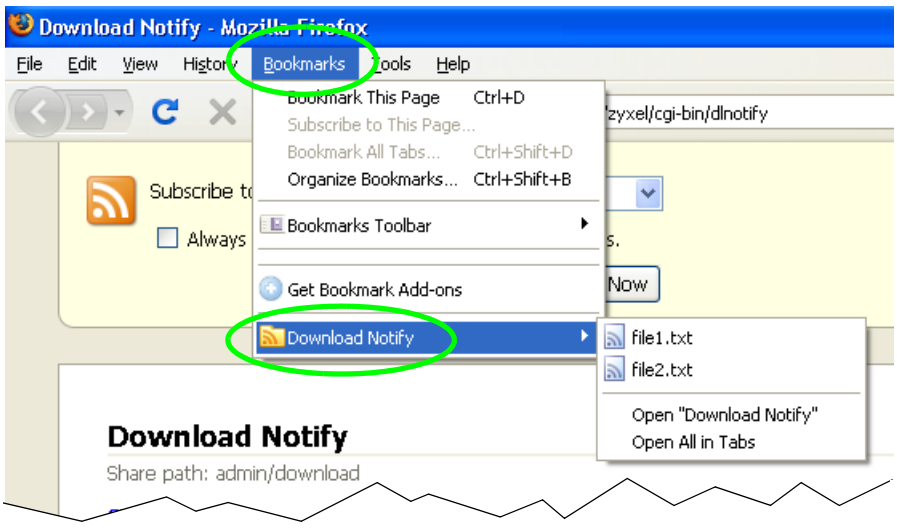
2 The following screen displays. Select **LiveBookmarks** from the drop-down list and click **Subscribe Now**.


Download Notify - Mozilla Firefox
File Edit View History Bookmarks Tools Help
http://172.23.26.45/zyxel/cgi-bin/dlnotify
Subscribe to this feed using
Live Bookmarks
Always use Live Bookmarks to subscribe to feeds.
Subscribe Now

3 The following screen displays. Select **Bookmarks Menu** and click **Add**.



4 From the Firefox's **Bookmarks Menu**, select **Download Notify** to check the updates of your NSA's download list.

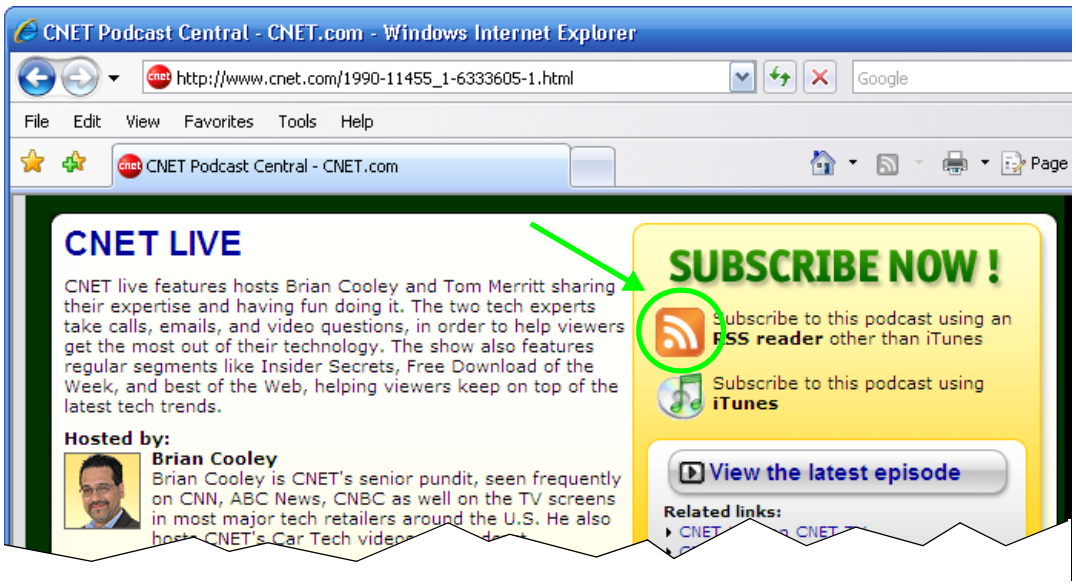


3.4 Broadcatching Tutorial

Use broadcatching to have the NSA download frequently updated digital content like TV programs, radio talk shows, Podcasts (audio files), and blogs. This example shows how to subscribe the NSA to the CNET TV Internet television channel. See Section 7.6 on page 158 for more on the broadcatching service.

1 Open your Internet browser (this example uses Firefox).

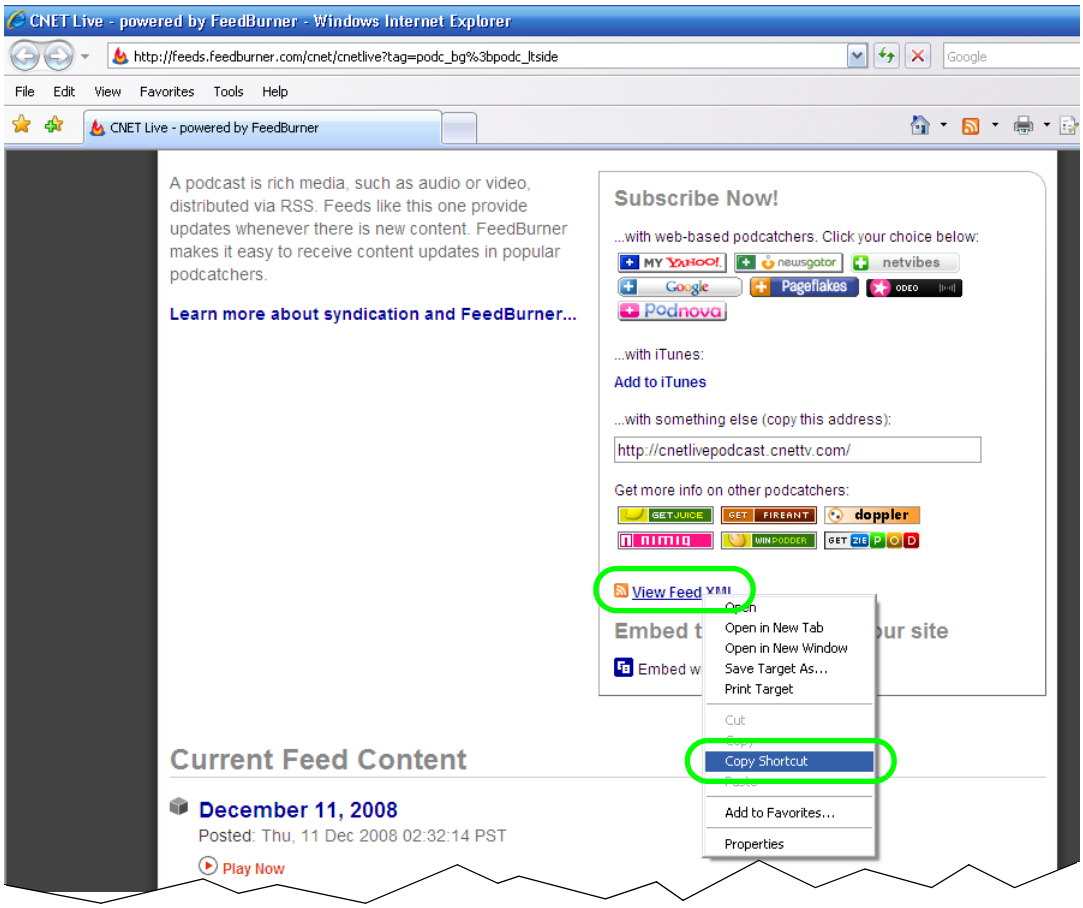
2 Find the link for the RSS feed containing the channel you want to add. In this example, http://reviews.cnet.com/4520-11455_7-6333605-1.html has an **RSS** link for subscribing to the CNET Live podcast. However this is not the link for the actual RSS feed. Click the link to go to another screen that has RSS feed links.


CNET Podcast Central - CNET.com - Windows Internet Explorer
http://www.cnet.com/1990-11455_1-6333605-1.html
Google
File Edit View Favorites Tools Help
CNET Podcast Central - CNET.com
Page
CNET LIVE
CNET live features hosts Brian Cooley and Tom Merritt sharing their expertise and having fun doing it. The two tech experts take calls, emails, and video questions, in order to help viewers get the most out of their technology. The show also features regular segments like Insider Secrets, Free Download of the Week, and best of the Web, helping viewers keep on top of the latest tech trends.
Hosted by:
Brian Cooley
Brian Cooley is CNET's senior pundit, seen frequently on CNN, ABC News, CNBC as well on the TV screens in most major tech retailers around the U.S. He also
SUBSCRIBE NOW !
Subscribe to this podcast using an RSS reader other than iTunes
Subscribe to this podcast using iTunes
View the latest episode
Related links:

Note: Make sure the link goes to the actual RSS feed instead of to another list of links or information about the channel.

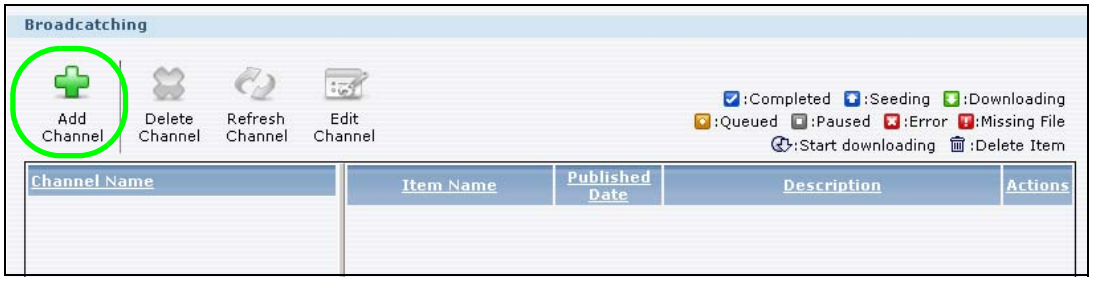
One way to test this is by clicking the link. Clicking an actual RSS feed link opens a screen of XML code (in browsers without an RSS feed aggregator) or a window where you can add the RSS feed (in browsers with an RSS feed aggregator).

3 Right-click the download link and select **Copy Link Location** in Internet Explorer (or **Copy Shortcut** in Internet Explorer).


CNET Live - powered by FeedBurner - Windows Internet Explorer
http://feeds.feedburner.com/cnet/cnetlive?tag=podc_bg%3bpodc_ltside
File Edit View Favorites Tools Help
CNET Live - powered by FeedBurner
A podcast is rich media, such as audio or video, distributed via RSS. Feeds like this one provide updates whenever there is new content. FeedBurner makes it easy to receive content updates in popular podcatchers.
Learn more about syndication and FeedBurner...
Subscribe Now!
...with web-based podcatchers. Click your choice below:
...with iTunes:
Add to iTunes
...with something else (copy this address):
http://cnetlivepodcast.cnettv.com/
Get more info on other podcatchers:
View Feed XML
Open
Open in New Tab
Open in New Window
Save Target As...
Print Target
Cut
Copy Shortcut
Add to Favorites...
Properties
Current Feed Content
December 11, 2008
Posted: Thu, 11 Dec 2008 02:32:14 PST
Play Now

4 Log into the NSA web configurator (see Section 2.3 on page 29) using the administrator account and click **Administration > Applications > Broadcatching**.

5 Click **Add Channel**.



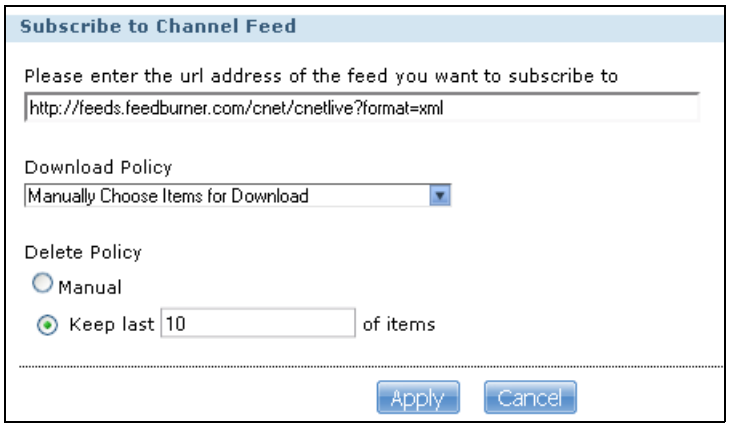
6 Right-click the URL field and select **Paste**.

7 The URL displays in the **URL** field.

8 Select a policy for what items to download. This example uses **Manually Choose Items for Download** so you will be able to select individual items to download later.

9 Select a policy for what items to delete. This example keeps the most recent 10 items.

10 Click **Apply**.



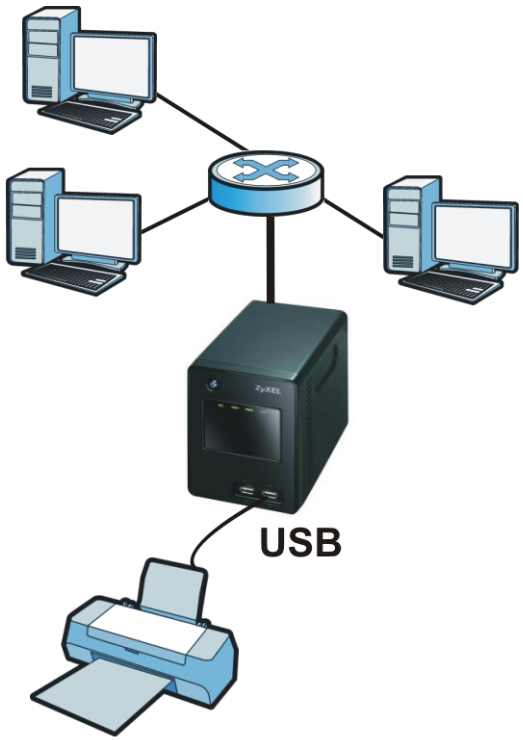
11 After a few moments, the channel appears in the **Broadcatching** screen where you can select items you want to download. The NSA saves the items you download in a folder named after the channel. By default, the channel folders are created in the **admin** share's **download** folder. The NSA's media server feature makes it easy for users on your network to play the broadcatching files you download. See Section 7.3.1 on page 135 for more on the media server.

3.5 Printer Server Tutorial

Do the following to have the NSA let computers on your network share a printer. See www.zyxel.com for a list of compatible printers.

1 Make sure the NSA is on and the **SYS** light is on steady (not blinking).

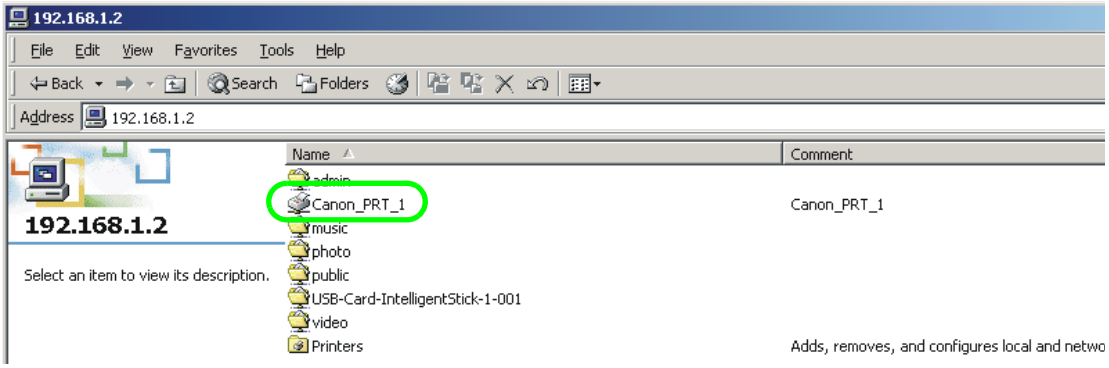
2 Use a USB cable to connect the printer's USB port to one of the NSA's USB ports. Make sure the printer is also connected to an appropriate power source.



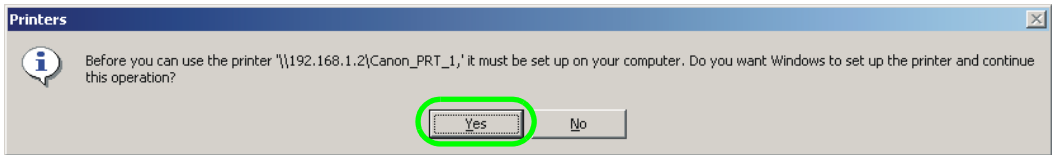
3 Turn on the printer.

4 The NSA detects the printer after a few moments.

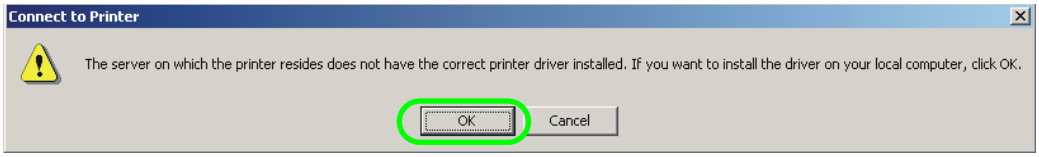
5 On your computer, open your CIFS file sharing program (Windows Explorer for example) and browse to the NSA. Double-click the printer's icon.



6 If you get a warning screen, click the option that lets you continue (**Yes** in this example).

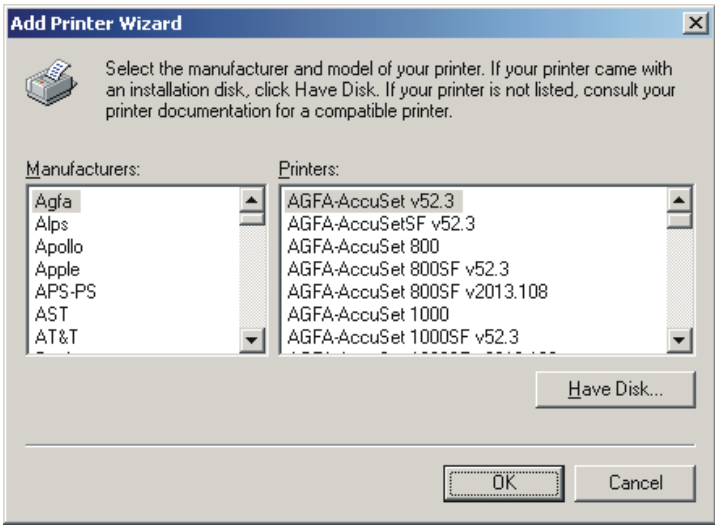

Printers
Before you can use the printer '\\192.168.1.2\Canon_PRT_1,' it must be set up on your computer. Do you want Windows to set up the printer and continue this operation?
Yes
No

7 If your computer does not already have the printer's driver installed, you will need to install it. In this example, click **OK**.

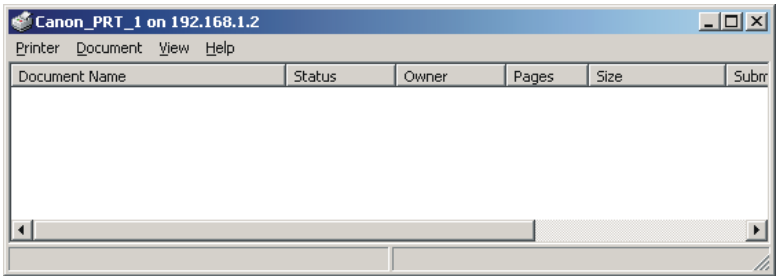

Connect to Printer
The server on which the printer resides does not have the correct printer driver installed. If you want to install the driver on your local computer, click OK.
OK
Cancel

8 Use the wizard screens to install the printer driver on the computer. You may need to get the file from the printer's CD or the printer manufacturer's website (the driver is not installed on the NSA).

Note: You must install the printer driver on each computer that will use the printer.



After the driver installation finishes, the computer is ready to use the printer. Select the printer in an application to use it to print. Browse to the NSA using a CIFS program (like Windows Explorer) and double-click the printer's icon to open the printer's queue of print jobs.



Note: Repeat steps 5 to 8 on your other computers so they can also use the printer.

3.6 Copy and Flickr Auto Upload Tutorial

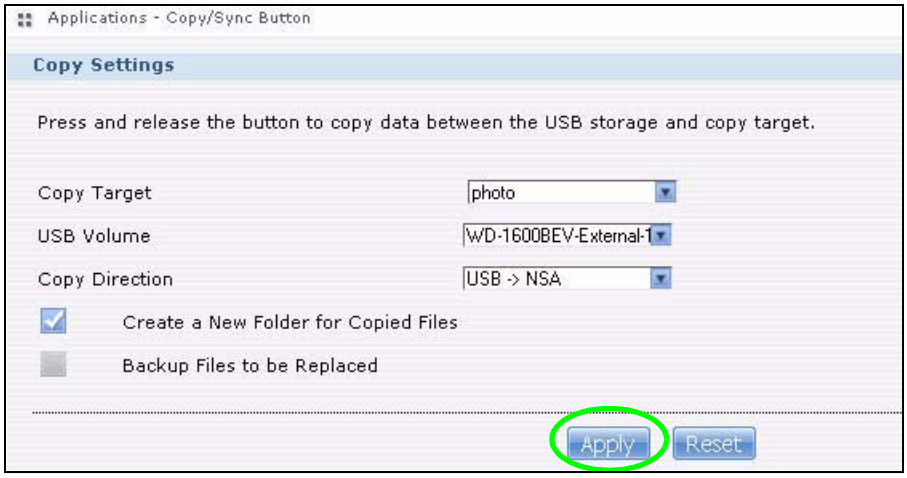
Amy received some photos taken during her best friend's wedding and saved the files on a USB disk. She wants to save a copy of the photos in the NSA and upload the photos to her Flickr account.

Amy has to activate the NSA's auto upload feature. See Section 7.9.1 on page 170 for more details on setting up a Flickr account for auto upload. In this example Amy select the NSA's photo share for auto upload.

This is how Amy would transfer the files from her USB disk to the NSA.

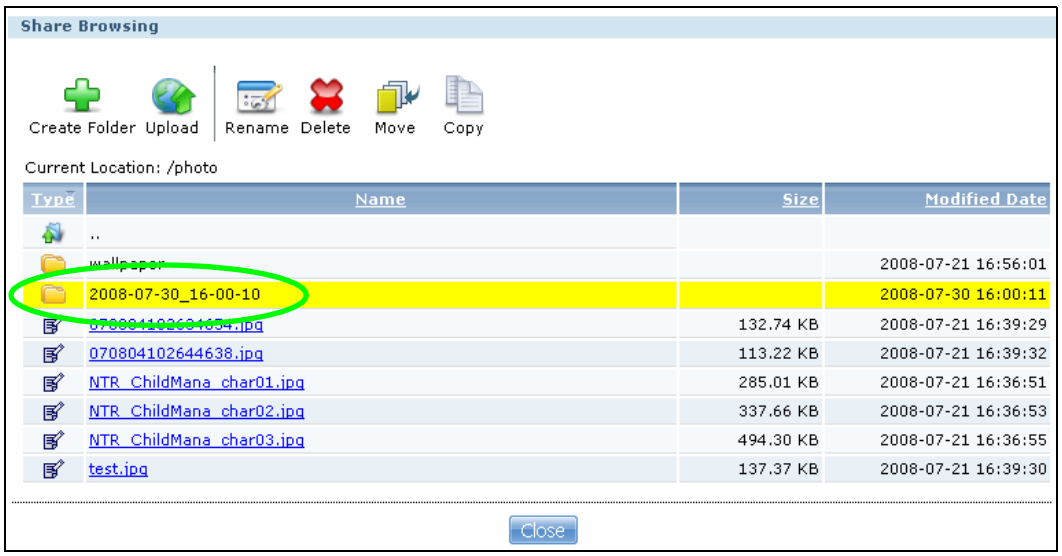
1 Click **Applications** > **Copy/Sync Button** in the navigation panel to open the screen.

2 Configure the copy settings as shown and click **Apply**.

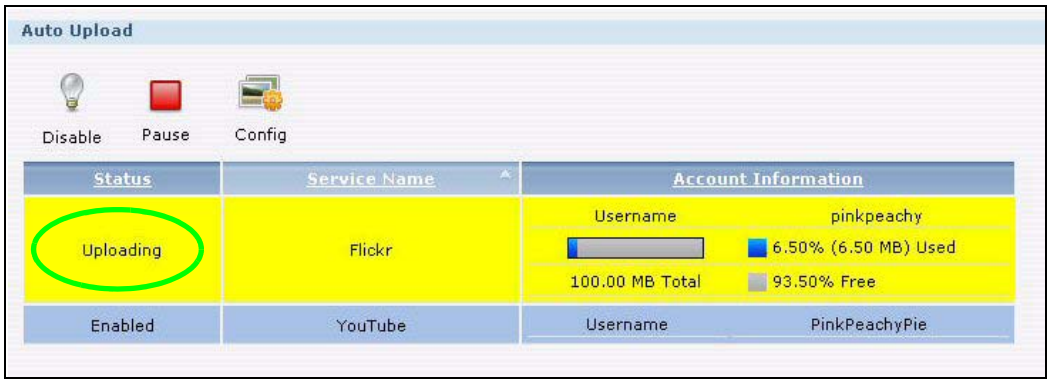


3 Press and release the **COPY/SYNC** button on the NSA's front panel to start copying files.

4 The copied files can be found in a new folder in the photo share.

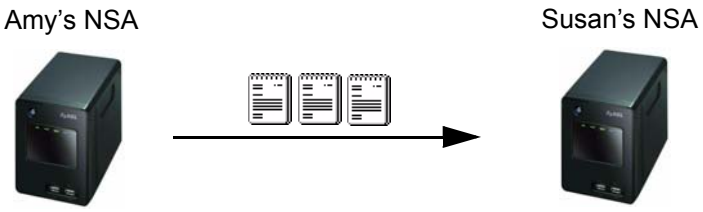


5 The NSA also automatically uploads the copied files to Flickr.

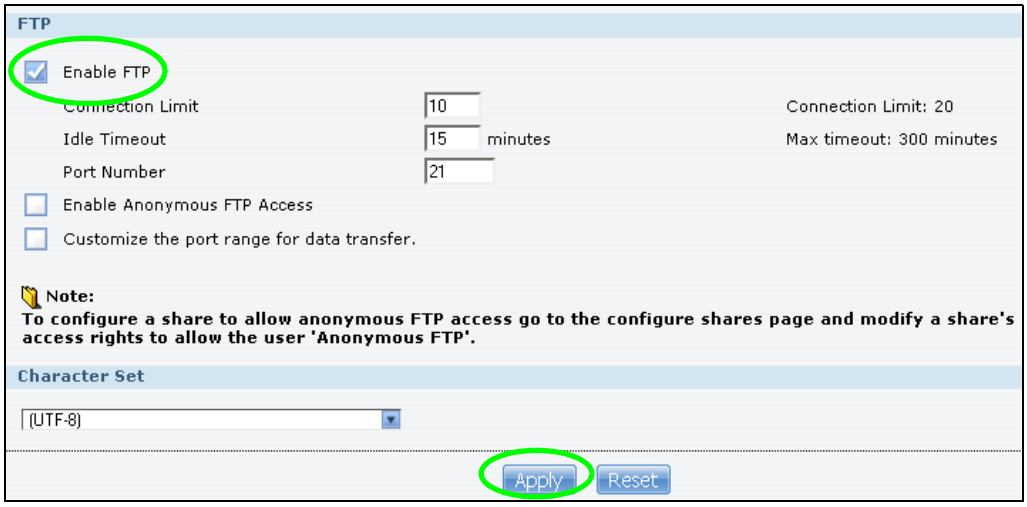


3.7 FTP Uploadr Tutorial

FTP Uploadr can automatically upload files saved on the NSA to a remote FTP server. Amy wants to share files on her NSA with Susan. They each have an NSA at home, so Susan has to set her NSA as an FTP server for Amy to automatically send files using FTP Uploadr.



To set the NSA as an FTP server, click **Applications** > **FTP** to open the **FTP** screen. Select **Enable FTP** and click **Apply**.



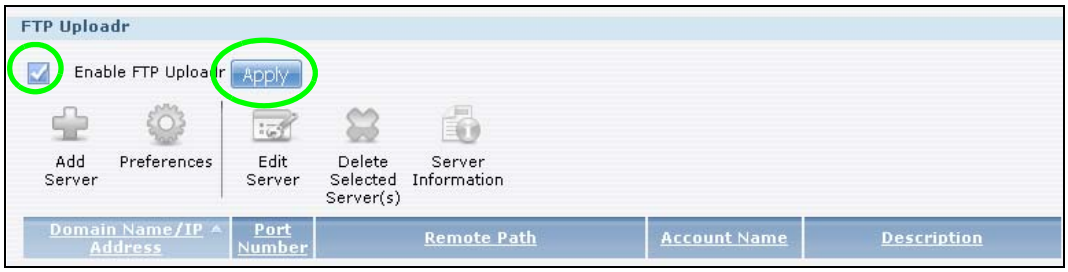
Susan also has to create a user account and share on her NSA for Amy to upload files. The share is used for files uploaded from Amy's NSA. Amy will then use the following information to configure FTP Uploadr on her NSA.

Table 13 FTP Uploadr Tutorial: FTP Server Information

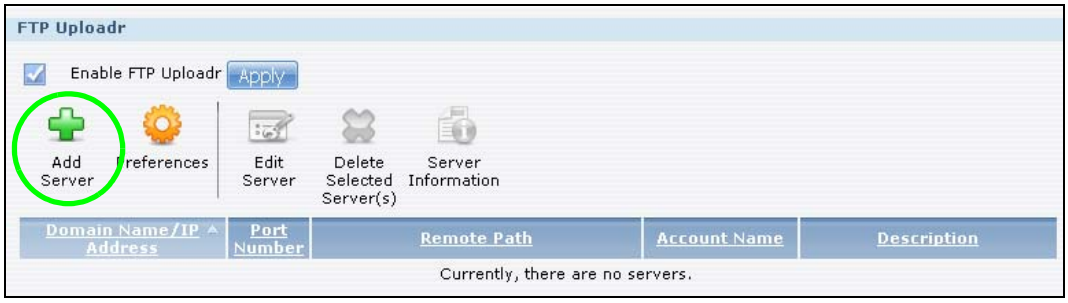
FTP Domain Name or IP Address	example2.com
FTP User Name	Amy
FTP Password	xxxxx
Share (Remote Path)	Amy

This is how Amy would set up the NSA's FTP Uploadr.

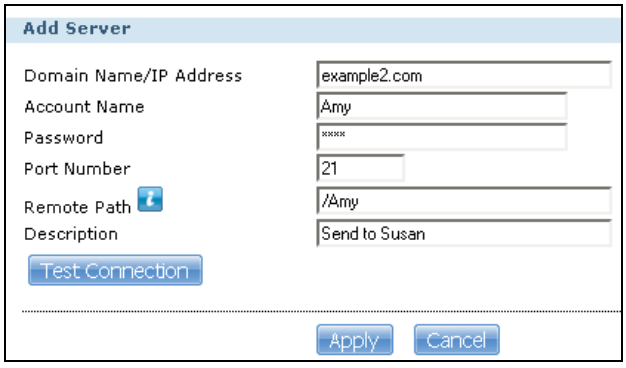
1 Click **Applications** > **Auto Upload** > **FTP Uploadr** to open the **FTP Uploadr** screen. Select **Enable FTP Uploadr** and click **Apply** to turn on FTP Uploadr.



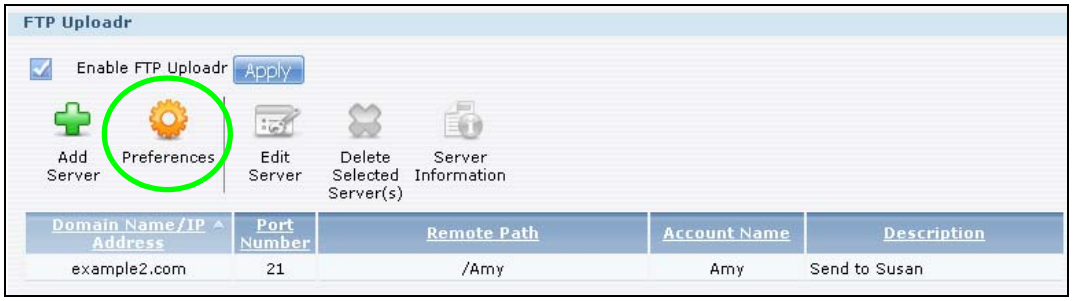
2 Click **Add Server**.



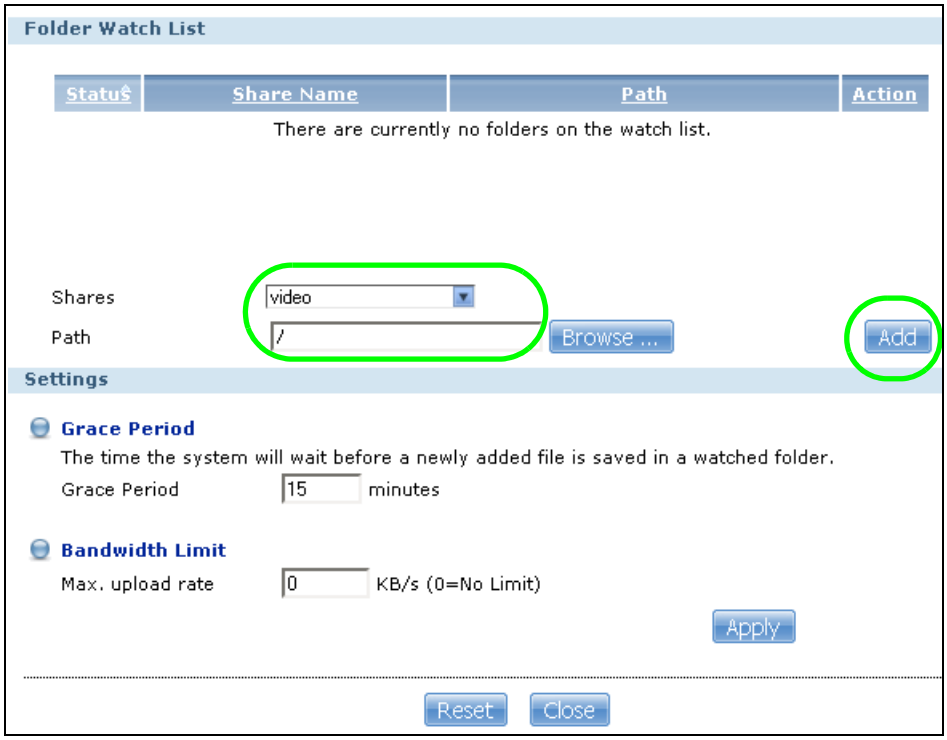
3 Enter the information as describe in Table 13 on page 83. Click **Apply** to add the server.



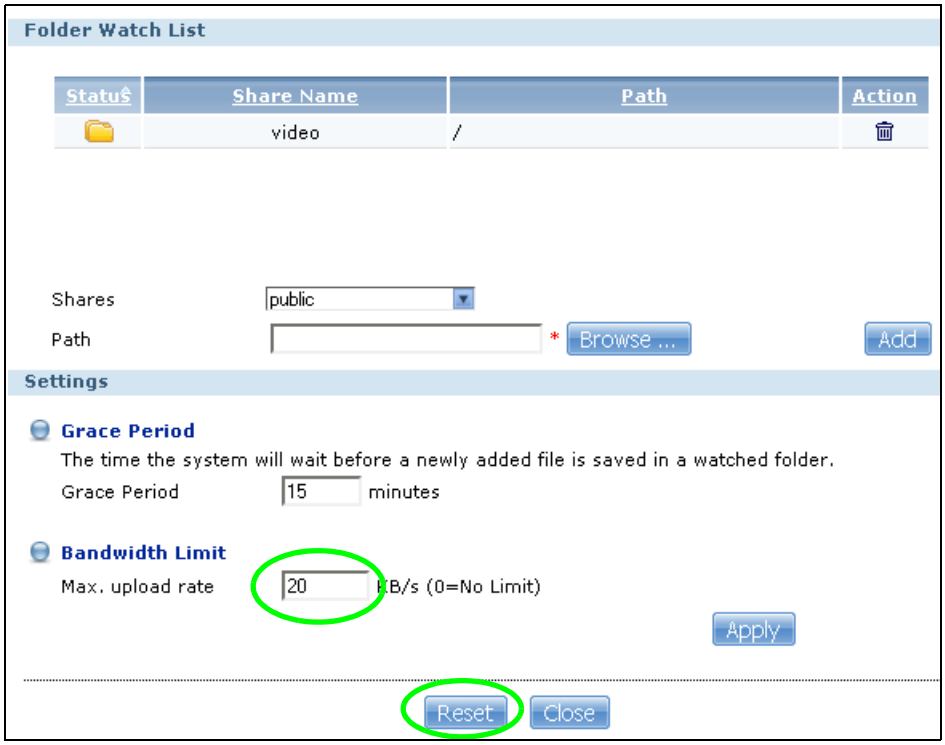
4 In the **FTP Uploadr** screen, click **Preferences** to configure the auto upload settings.



5 Amy wants to share video files with Susan. In the **Preferences** screen, select **video** from the **Shares** drop-down list box, enter a forward slash in the **Path** field and click **Add** to add the share to the **Folder Watch List**.

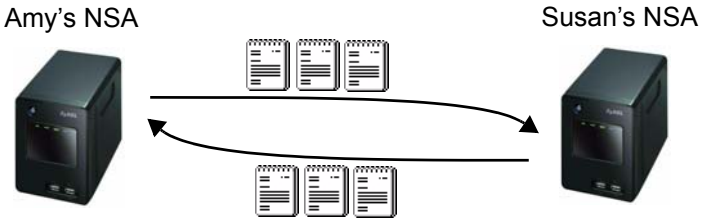


6 Amy also set the **Bandwidth Limit** to 20KB/s so that the upload doesn't slow down her Internet connection.



Now Amy has set up FTP Uploadr to send files to Susan's NSA. Everytime Amy adds new files or renames files in the **video** share, these new or modified files will be uploaded automatically to the **Amy** share on Susan's NSA.

Similarly, Susan can go through the steps described above to configure FTP Uploadr on her NSA. Once Susan completes the setup, Amy can also receive files from Susan's NSA.

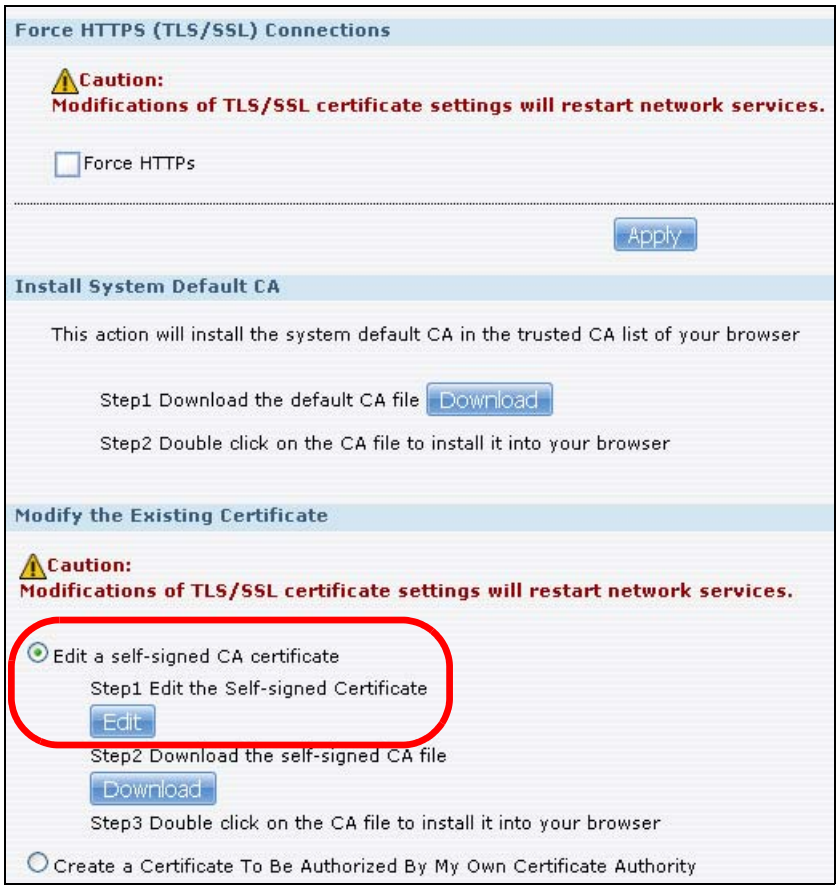


3.8 Web Configurator's Security Sessions

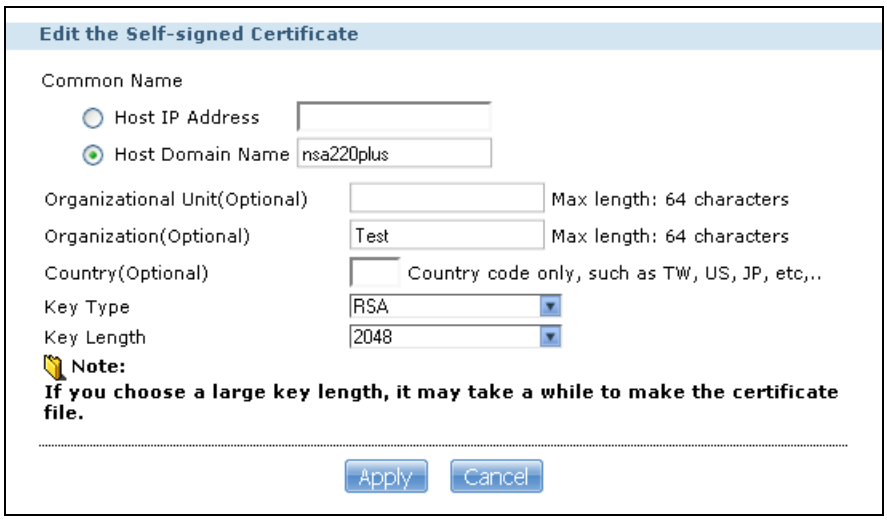
These tutorials show you how to configure security for the NSA's Web Configurator sessions. You will customize the NSA's self-signed SSL certificate and distribute it to your users.

3.8.1 Customizing the NSA's Certificate

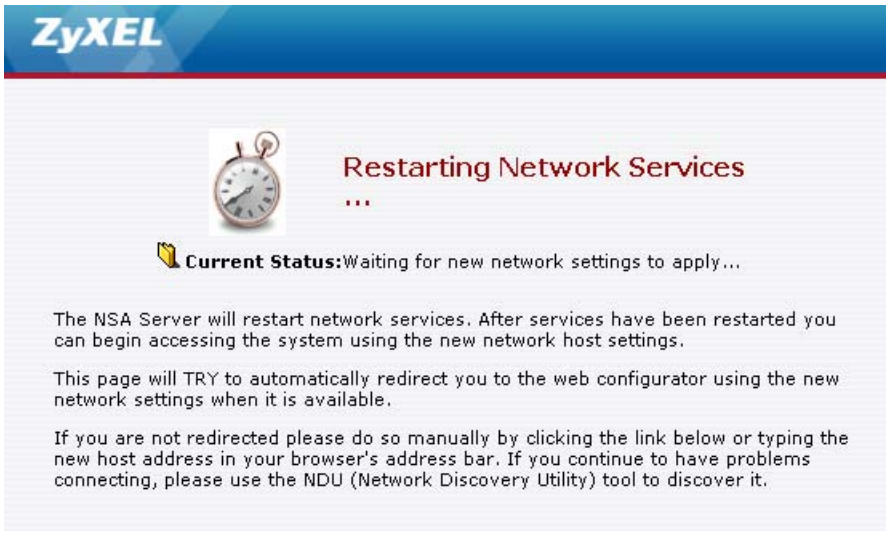
1 Click **Maintenance > SSL** and then select **Edit a self-signed CA certificate** and click **Edit**.


Force HTTPS (TLS/SSL) Connections
Caution:
Modifications of TLS/SSL certificate settings will restart network services.
Force HTTPs
Apply
Install System Default CA
This action will install the system default CA in the trusted CA list of your browser
Step1 Download the default CA file
Download
Step2 Double click on the CA file to install it into your browser
Modify the Existing Certificate
Caution:
Modifications of TLS/SSL certificate settings will restart network services.
Edit a self-signed CA certificate
Step1 Edit the Self-signed Certificate
Edit
Step2 Download the self-signed CA file
Download
Step3 Double click on the CA file to install it into your browser
Create a Certificate To Be Authorized By My Own Certificate Authority

2 Next, let's modify the certificate by changing the **Common Name** to this NSA's host name of "nsa220plus", the **Organization** to "Test" and the **Key Length** to **2048**.

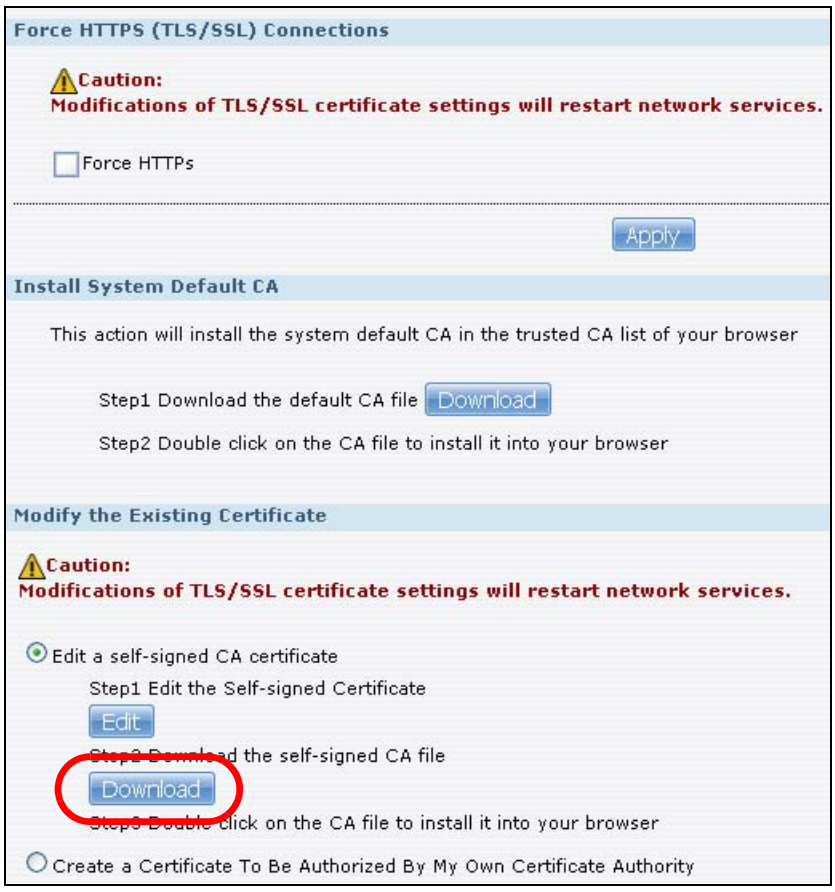


3 The NSA restarts its network services and returns you to the login screen.

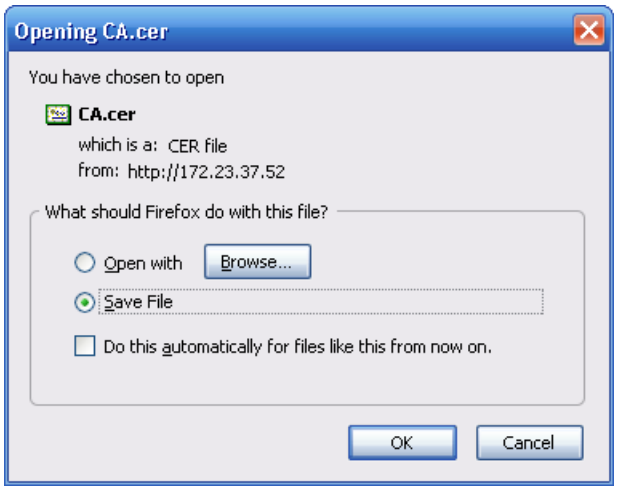

ZyXEL
Restarting Network Services
...
Current Status:Waiting for new network settings to apply...
The NSA Server will restart network services. After services have been restarted you can begin accessing the system using the new network host settings.
This page will TRY to automatically redirect you to the web configurator using the new network settings when it is available.
If you are not redirected please do so manually by clicking the link below or typing the new host address in your browser's address bar. If you continue to have problems connecting, please use the NDU (Network Discovery Utility) tool to discover it.

3.8.2 Downloading and Installing Customized Certificate

1 Log in and return to **Maintenance > SSL**. Under **Modify the Existing Certificate**, click **Download**.


Force HTTPS (TLS/SSL) Connections
Caution:
Modifications of TLS/SSL certificate settings will restart network services.
Force HTTPs
Apply
Install System Default CA
This action will install the system default CA in the trusted CA list of your browser
Step1 Download the default CA file
Download
Step2 Double click on the CA file to install it into your browser
Modify the Existing Certificate
Caution:
Modifications of TLS/SSL certificate settings will restart network services.
Edit a self-signed CA certificate
Step1 Edit the Self-signed Certificate
Edit
Download
Create a Certificate To Be Authorized By My Own Certificate Authority

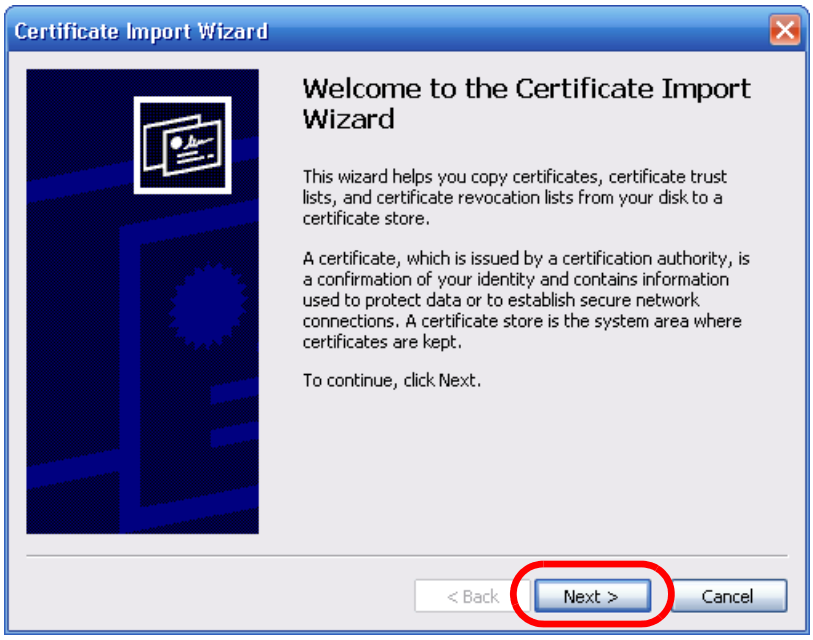
2 Save the file to your computer.



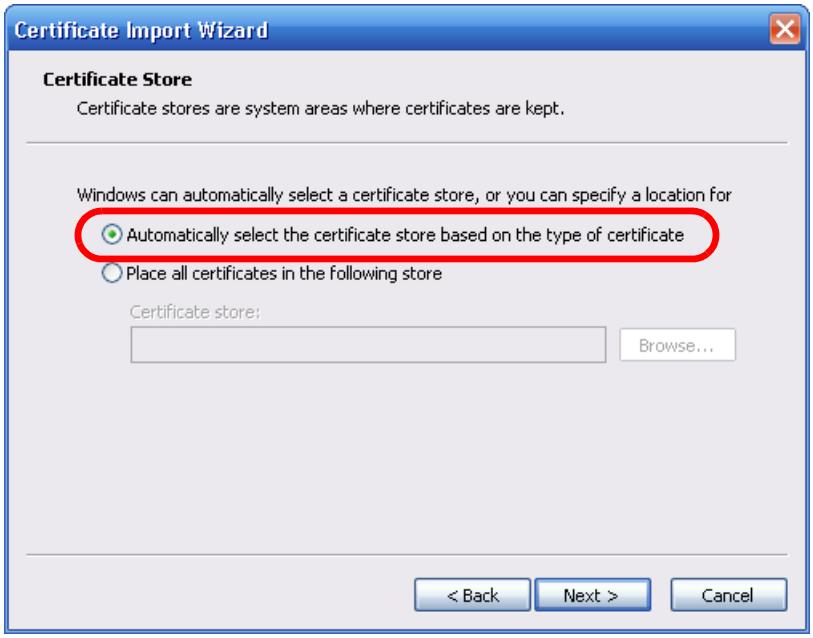
3 Find the certificate file on your computer and double-click it.

4 Install the certificate. The rest of the steps in this section are an example of installing a certificate in Windows. See Appendix D on page 285 for other examples. In the **Certificate** dialog box, click **Install Certificate**.

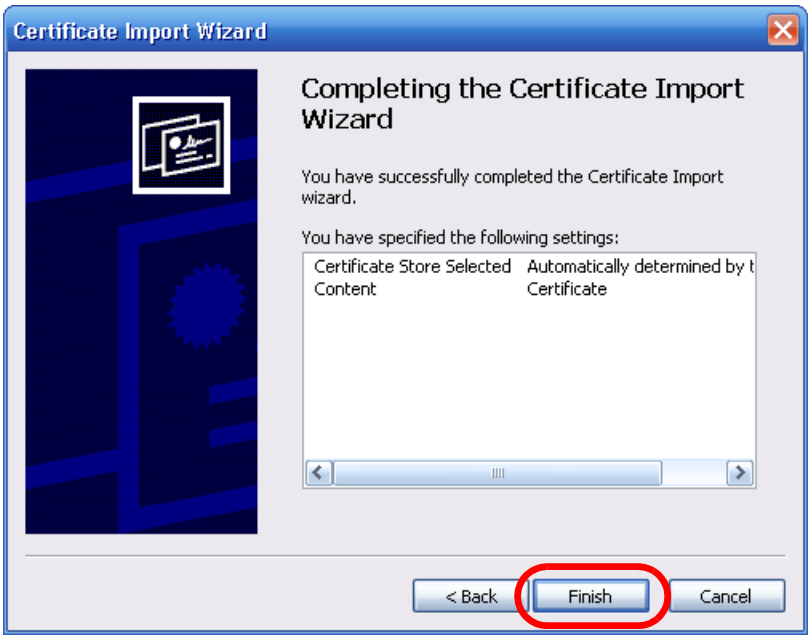
5 In the **Certificate Import Wizard**, click **Next**.


Certificate Import Wizard
Welcome to the Certificate Import Wizard
This wizard helps you copy certificates, certificate trust lists, and certificate revocation lists from your disk to a certificate store.
A certificate, which is issued by a certification authority, is a confirmation of your identity and contains information used to protect data or to establish secure network connections. A certificate store is the system area where certificates are kept.
To continue, click Next.
< Back
Next >
Cancel

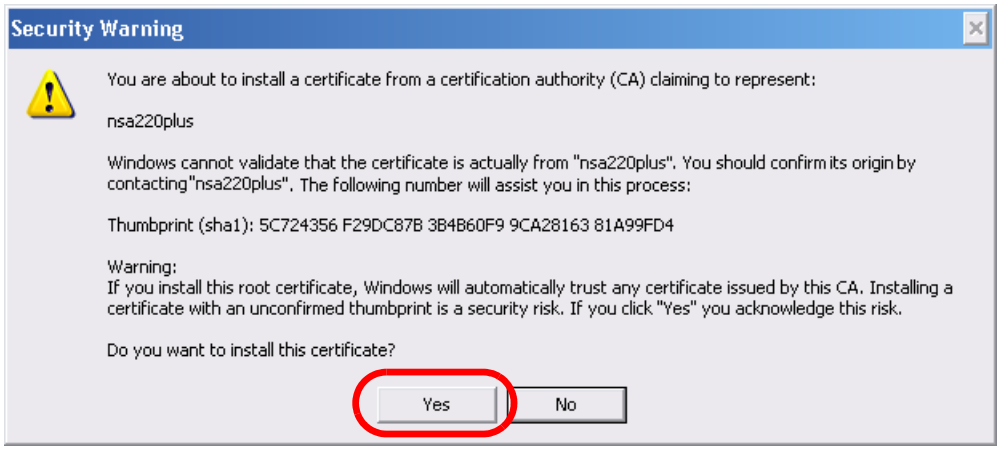
6 Leave **Automatically select certificate store based on the type of certificate** selected and click **Next**.


Certificate Import Wizard
Certificate Store
Certificate stores are system areas where certificates are kept.
Windows can automatically select a certificate store, or you can specify a location for
Automatically select the certificate store based on the type of certificate
Place all certificates in the following store
Certificate store:
Browse...
< Back
Next >
Cancel

7 In the **Completing the Certificate Import Wizard** screen, click **Finish**.



8 If you are presented with another **Security Warning**, click **Yes**.

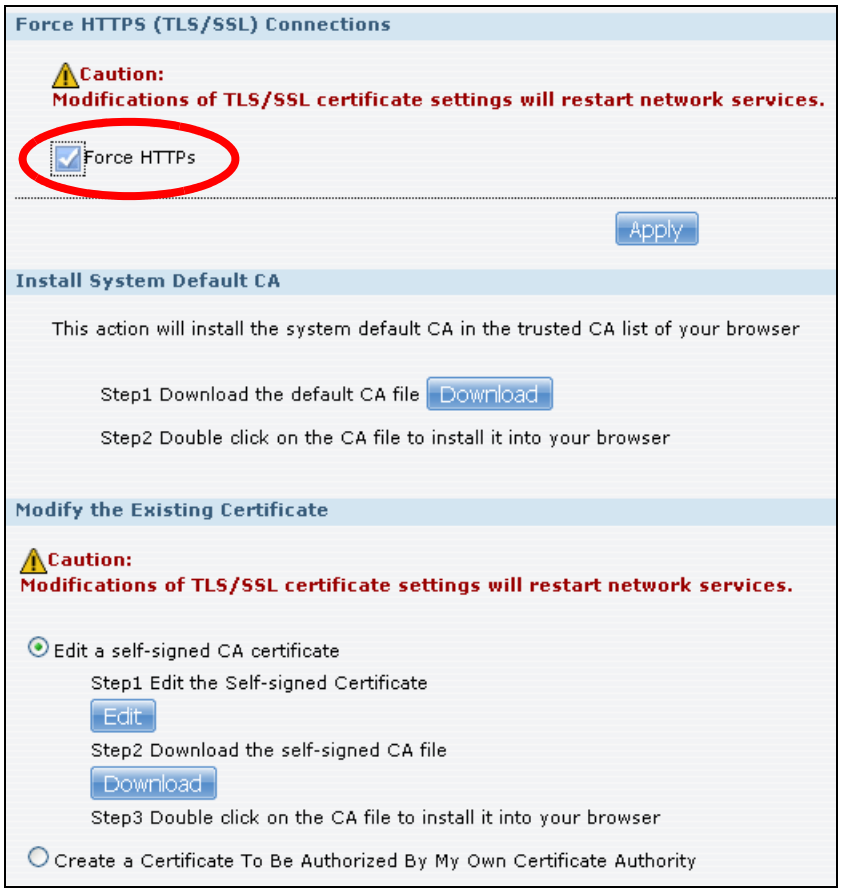

Security Warning
You are about to install a certificate from a certification authority (CA) claiming to represent:
nsa220plus
Windows cannot validate that the certificate is actually from "nsa220plus". You should confirm its origin by contacting"nsa220plus". The following number will assist you in this process:
Thumbprint (sha1): 5C724356 F29DC87B 3B4B60F9 9CA28163 81A99FD4
Warning:
If you install this root certificate, Windows will automatically trust any certificate issued by this CA. Installing a certificate with an unconfirmed thumbprint is a security risk. If you click "Yes" you acknowledge this risk.
Do you want to install this certificate?
Yes
No

9 Finally, click **OK** when presented with the successful certificate installation message.

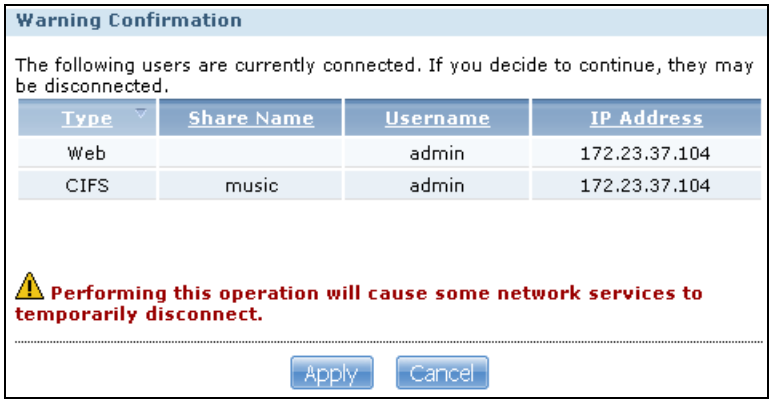
3.8.3 Turn on the NSA's Web Security

Now that you have customized the NSA's certificate and installed it in your computer, you can turn on security for your Web Configurator sessions. This example uses Firefox 3.0. See Appendix D on page 285 for more information on browsers and certificates.

1 Close your web browser and open it again to reset its session with the NSA. Log in and click **Maintenance > SSL**. Select **Force HTTPS** and click **Apply**.


Force HTTPS (TLS/SSL) Connections
Caution:
Modifications of TLS/SSL certificate settings will restart network services.
Force HTTPs
Apply
Install System Default CA
This action will install the system default CA in the trusted CA list of your browser
Step1 Download the default CA file
Download
Step2 Double click on the CA file to install it into your browser
Modify the Existing Certificate
Caution:
Modifications of TLS/SSL certificate settings will restart network services.
Edit a self-signed CA certificate
Step1 Edit the Self-signed Certificate
Edit
Step2 Download the self-signed CA file
Download
Step3 Double click on the CA file to install it into your browser
Create a Certificate To Be Authorized By My Own Certificate Authority

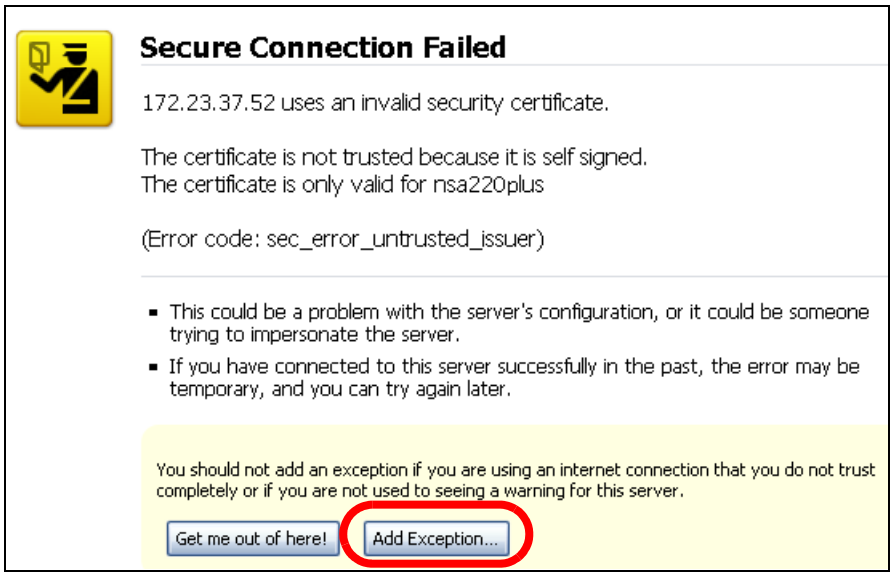
2 A warning screen pops up if applying your change may disconnect some users. Click **Apply** to continue.



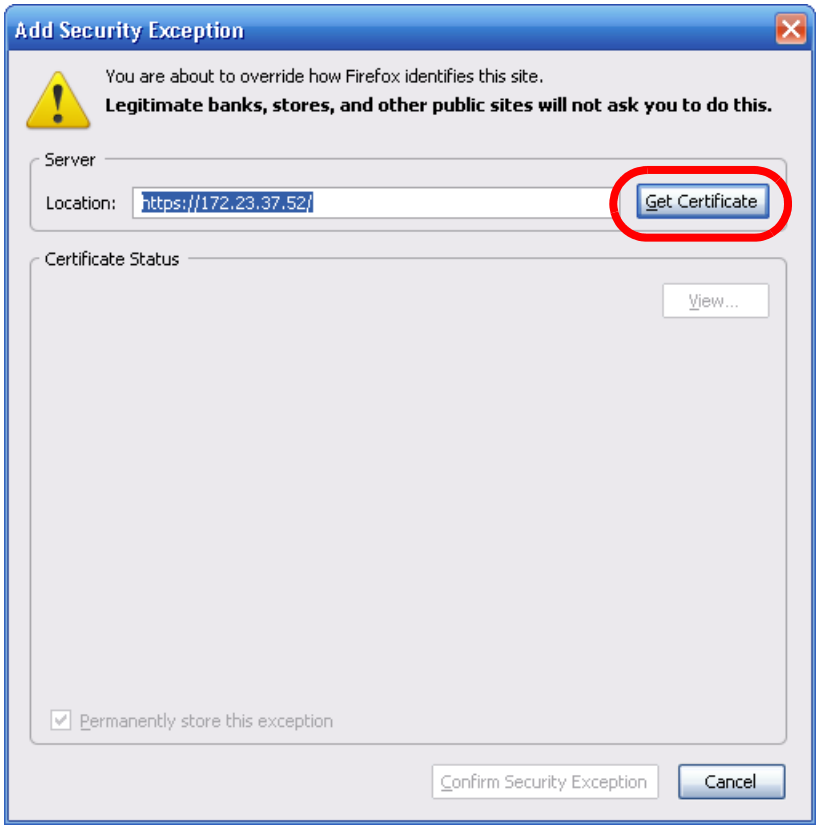
3 The NSA logs you out and automatically redirects your formerly non-secure (HTTP) connection to a secure (HTTPS) connection. Your browser may give you a warning about the device's public key certificate. Add an exception to allow your browser to bypass the warning.

Secure Connection Failed
172.23.37.52 uses an invalid security certificate.
The certificate is not trusted because it is self signed.
The certificate is only valid for nsa220plus
(Error code: sec_error_untrusted_issuer)
This could be a problem with the server's configuration, or it could be someone trying to impersonate the server.
If you have connected to this server successfully in the past, the error may be temporary, and you can try again later.
Or you can add an exception...

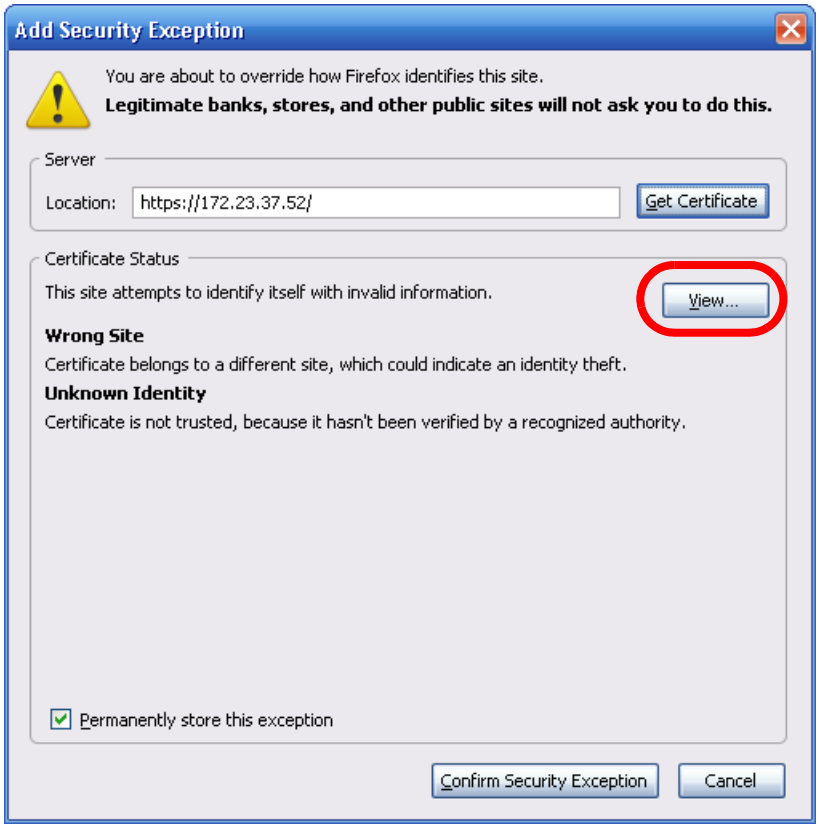
4 Click **Add Exception**.


Secure Connection Failed
172.23.37.52 uses an invalid security certificate.
The certificate is not trusted because it is self signed.
The certificate is only valid for nsa220plus
(Error code: sec_error_untrusted_issuer)
This could be a problem with the server's configuration, or it could be someone trying to impersonate the server.
If you have connected to this server successfully in the past, the error may be temporary, and you can try again later.
You should not add an exception if you are using an internet connection that you do not trust completely or if you are not used to seeing a warning for this server.
Get me out of here!
Add Exception...

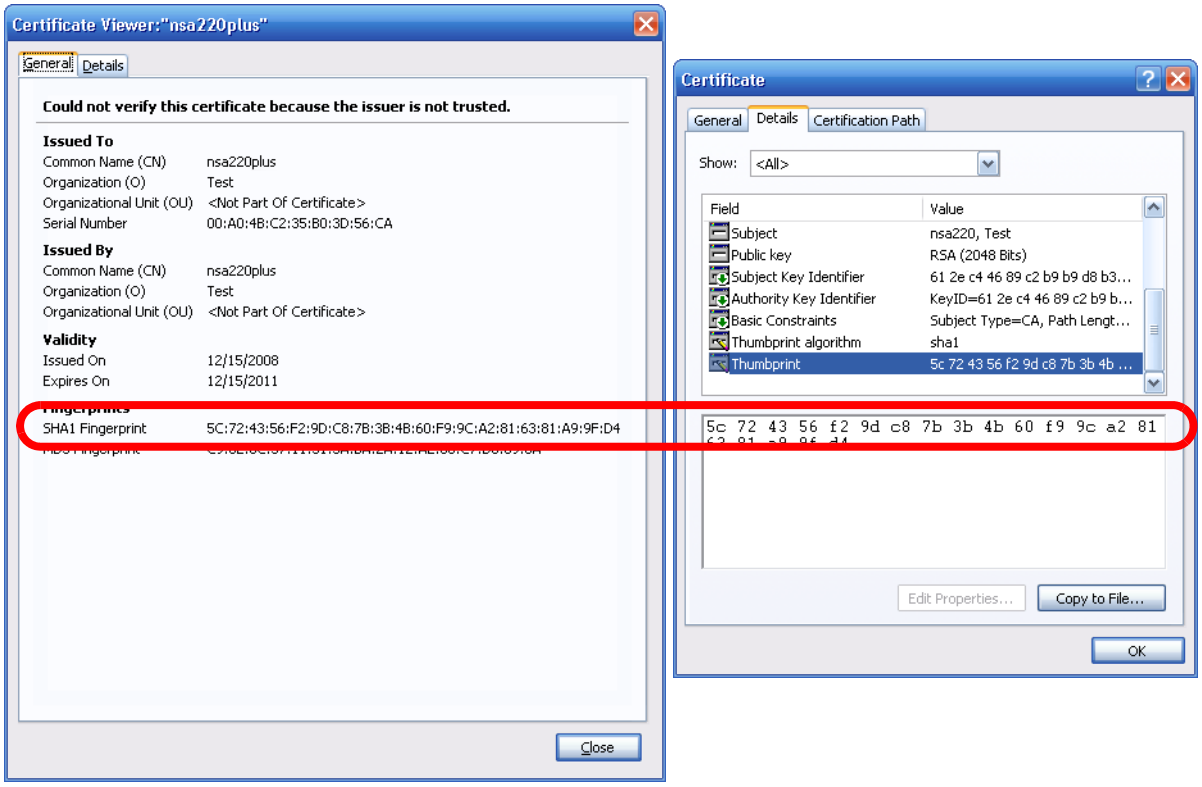
5 Click **Get Certificate**.



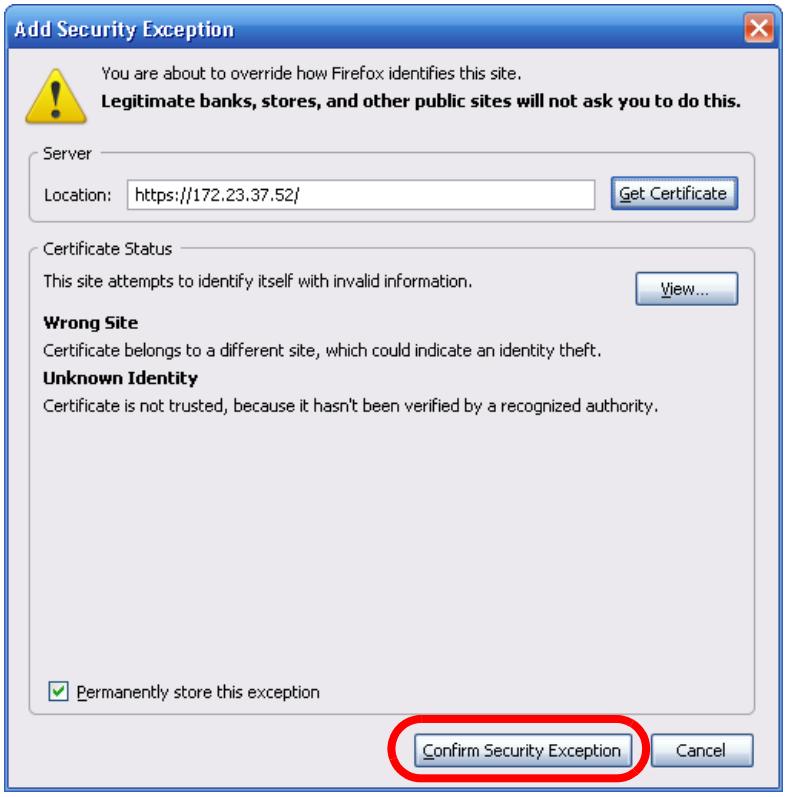
6 Before you add an exception, verify that the device to which you are trying to connect is providing the correct certificate. Click **View**.


Add Security Exception
You are about to override how Firefox identifies this site.
Legitimate banks, stores, and other public sites will not ask you to do this.
Server
Location:
https://172.23.37.52/
Get Certificate
Certificate Status
This site attempts to identify itself with invalid information.
View...
Wrong Site
Certificate belongs to a different site, which could indicate an identity theft.
Unknown Identity
Certificate is not trusted, because it hasn't been verified by a recognized authority.
Permanently store this exception
Confirm Security Exception
Cancel

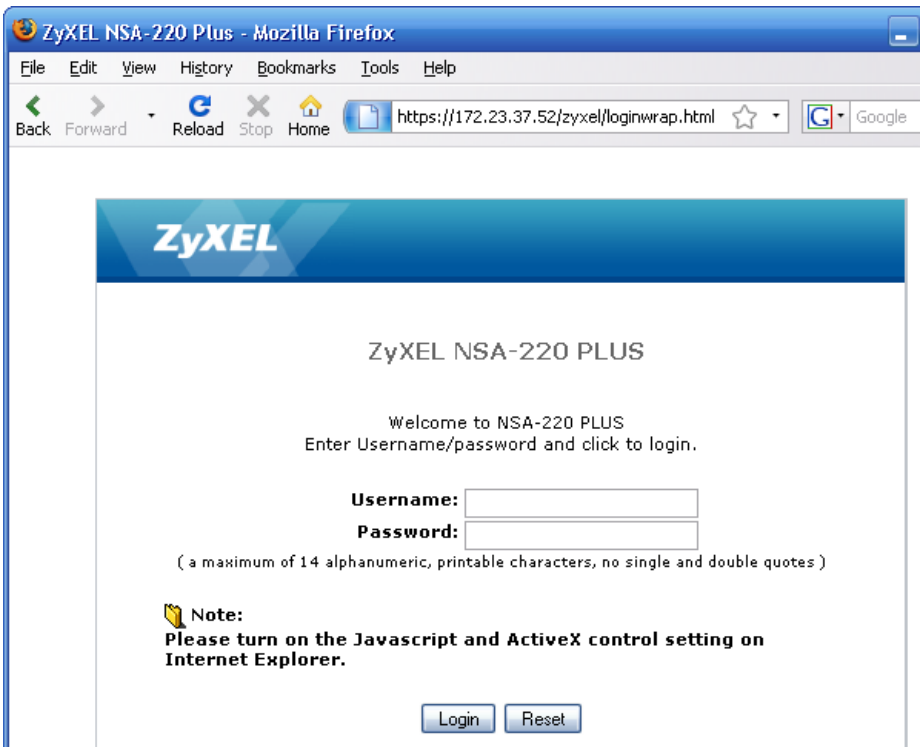
7 The SHA1 fingerprint must match the NSA's certificate you downloaded from the NSA to your computer. (Double-click the NSA's certificate file and then click **Details** and look at the **Thumbprint**). Click **Close**.



8 If the certificate fingerprints match, click **Confirm Security Exception**, otherwise click **Cancel**.


Add Security Exception
You are about to override how Firefox identifies this site.
Legitimate banks, stores, and other public sites will not ask you to do this.
Server
Location: https://172.23.37.52/
Get Certificate
Certificate Status
This site attempts to identify itself with invalid information.
View...
Wrong Site
Certificate belongs to a different site, which could indicate an identity theft.
Unknown Identity
Certificate is not trusted, because it hasn't been verified by a recognized authority.
Permanently store this exception
Confirm Security Exception
Cancel

9 The login screen displays.


ZyXEL NSA-220 Plus - Mozilla Firefox
File Edit View History Bookmarks Tools Help
Back Forward Reload Stop Home
https://172.23.37.52/zyxel/loginwrap.html
Google
ZyXEL
ZyXEL NSA-220 PLUS
Welcome to NSA-220 PLUS
Enter Username/password and click to login.
Username:
Password:
(a maximum of 14 alphanumeric, printable characters, no single and double quotes)
Note:
Please turn on the Javascript and ActiveX control setting on Internet Explorer.
Login
Reset

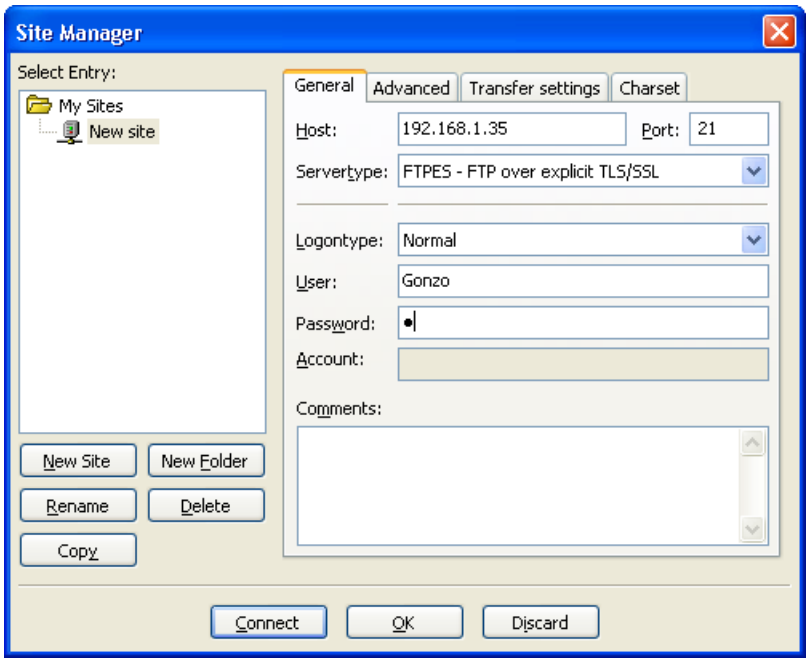
Now, anyone who connects to the NSA's Web Configurator screens will automatically do so by HTTPs. Use a secure method to let your users know the correct fingerprint for the NSA's certificate so they can check it before adding a security exception (as in steps 6 to 7 on pages 95 to 96). See the next section for how to use FTPS with the NSA for secure FTP transfers.

3.9 Using FTPS to Connect to the NSA

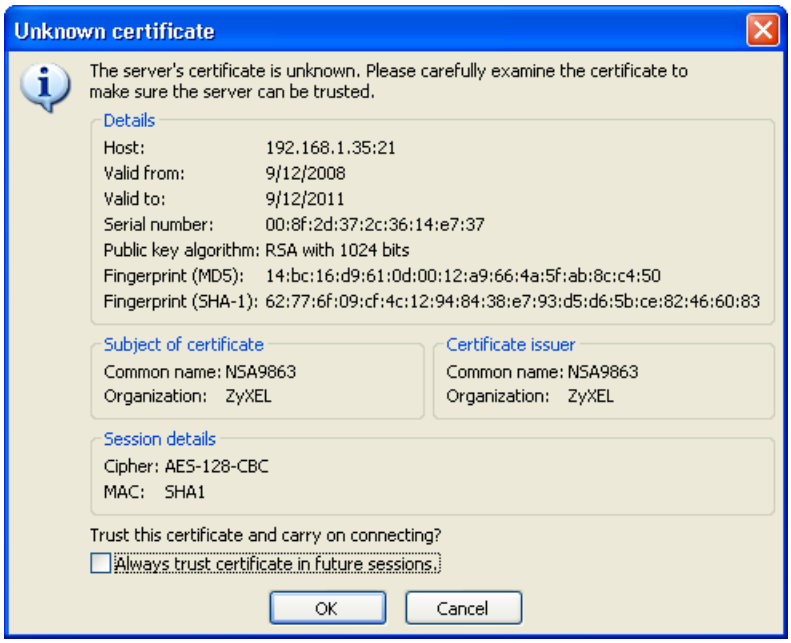
This section covers how to use FTP over TLS with the NSA for secure FTP transfers. Before you go through this section, read Section 3.8 on page 86 to configure HTTPS. This example uses FileZilla.

1 Open FileZilla and click **File > Site Manager > New Site**.

- Configure the **Host** field with the NSA's address.
- Set the **Servertype** to **FTPES - FTP over explicit TLS/SSL**.
- Configure the account name and password.
- Click **Connect.**



2 A security warning screen displays. The SHA1 fingerprint must match the NSA's certificate you downloaded from the NSA to your computer. (Double-click the NSA's certificate file and then click **Details** and look at the **Thumbprint**). If they match, click **OK**.



The shares and folders to which Gonzo has access display. Now you can use FTP to securely transfer files to or from the NSA. Use a secure method to let your users know the correct fingerprint for the NSA's certificate so they can check it before adding a security exception.

3.10 Using a MAC to Access the NSA

This tutorial shows you how to find the NSA on MAC OS X 10.5 (Leopard).

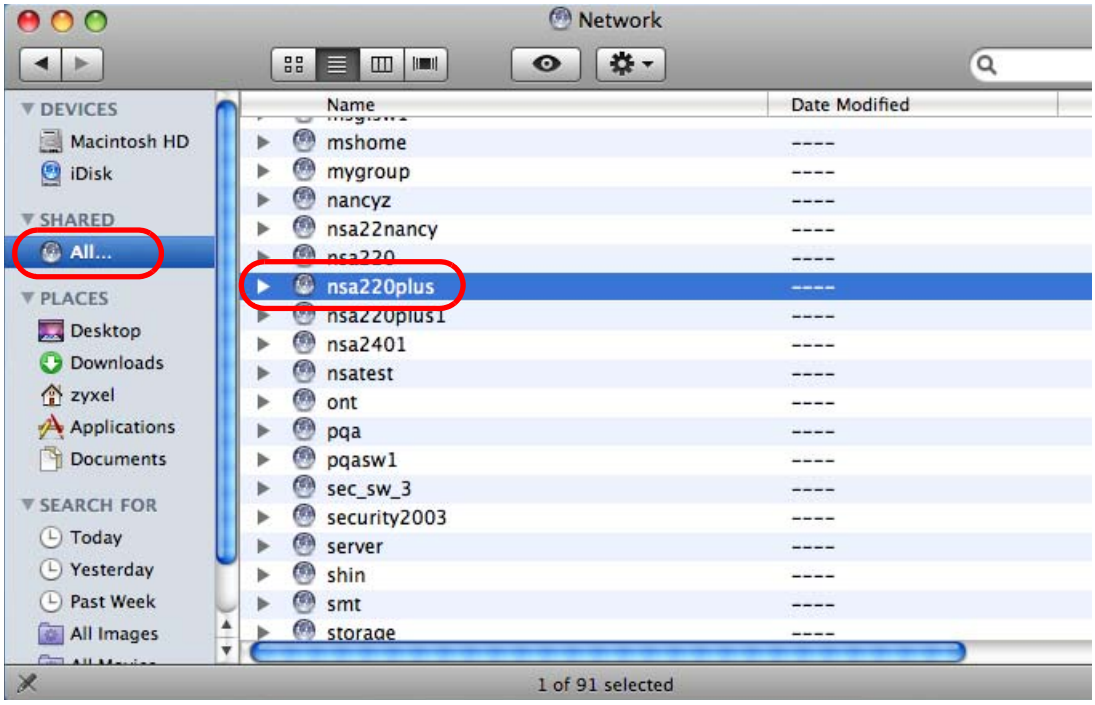
You can access the NSA in two ways:

- Use the **Finder** to browse for the NSA, or
- Use the **Finder** > **Go** option to connect to the NSA.

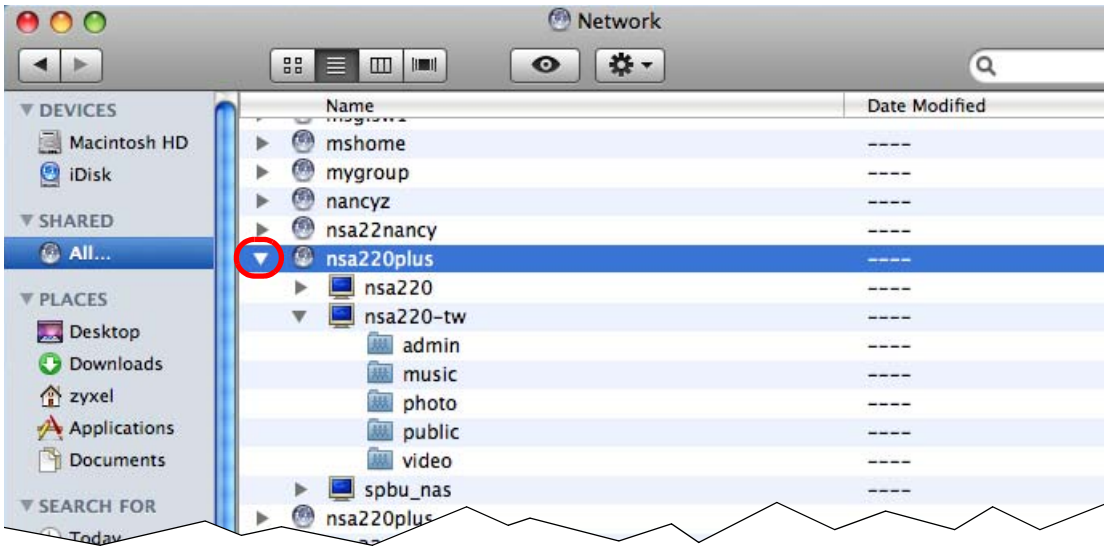
3.10.1 Finder

1 Open a new **Finder** window.

2 Select **All** under the **SHARED** sidebar. Look for the NSA from the **Network** list.

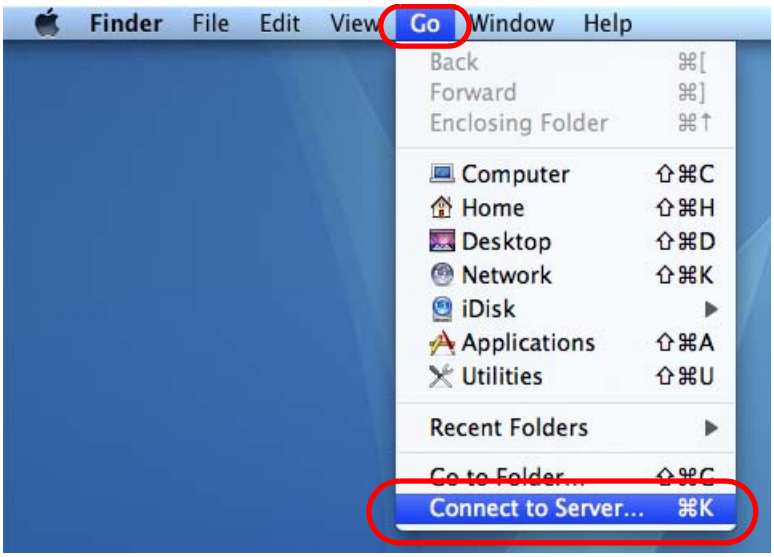


3 Expand the NSA to display the shares you may access.

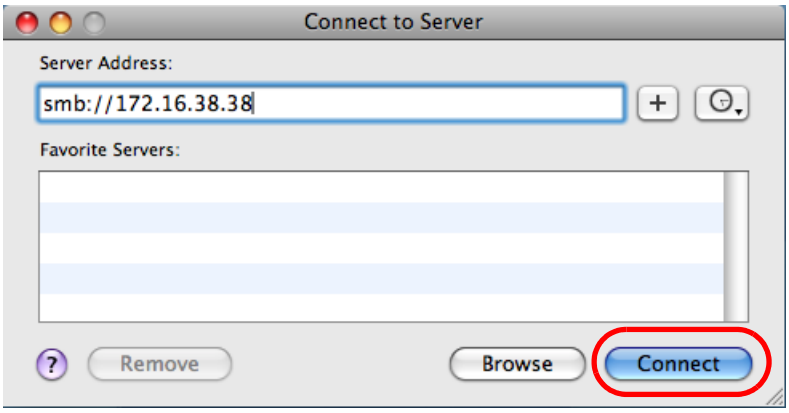


3.10.2 Go Menu

4 In the **Finder**, click **Go** > **Connect to Server**.



5 When the **Connect to Server** dialog box opens, enter smb:// and the NSA's IP address in the **Server Address** field. You may also click **Browse** to have the MAC search for the NSA. Click **Connect**.



6 Once you establish the connection, you can access the NSA from the **Finder** or directly from the desktop.

PART II
System Setting, Storage, Network and Applications

System Setting (105)

Storage (111)

Network (125)

Applications (131)

4

System Setting

4.1 Overview

This chapter gives an overview of the various features included in the system setting screens.

4.1.1 What You Can Do in the System Setting Screens

- Use the **Server Name** screen (Section 4.2 on page 106) to specify the NSA's server and workgroup names.
- Use the **Date/Time** screen (Section 4.3 on page 107) to set up date/time and choose a time zone for the NSA.

4.1.2 What You Need to Know About System Settings

Windows/CIFS

Common Internet File System (CIFS) is a standard protocol supported by most operating systems in order to share files across the network.

- CIFS is included by default in Windows and Mac OSX operating systems.
- You can use Samba with Linux to use CIFS.
- CIFS transfers use security.

Time Lag

Time lag occurs when the time on the NSA falls behind the time on the time server. This may happen if:

- the time server is no longer reachable
- if the NSA is shut down often (the NSA internal battery keeps time when the NSA is shut down and this may cause possible variance)
- power surges occur.

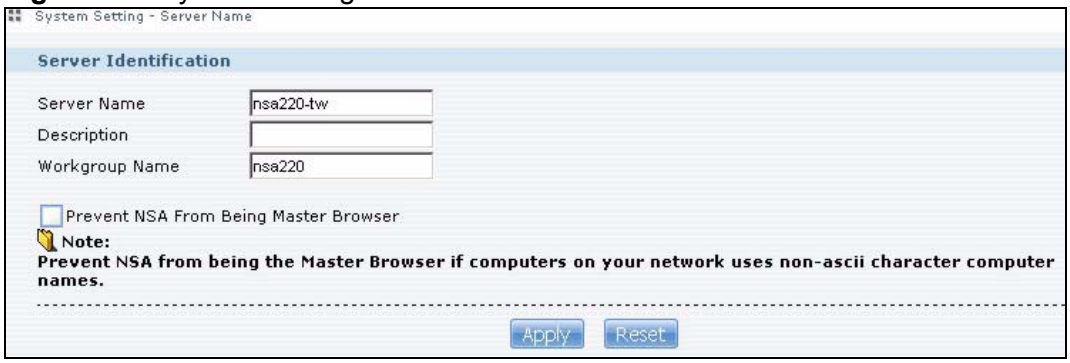
The NSA gives no warning if time lag occurs. You should resynchronize the time after a power surge or after you have shut down the NSA several times.

4.2 The Server Name Screen

Click **System Setting** > **Server Name** to open the following screen. Use this screen to configure your CIFS settings. In this screen you can set your server name and specify if your NSA is a part of a workgroup or domain.

Note: CIFS cannot be disabled on the NSA.

Figure 19 System Setting > Server Name



The following table describes the labels in these screens.

Table 14 System Setting > Server Name

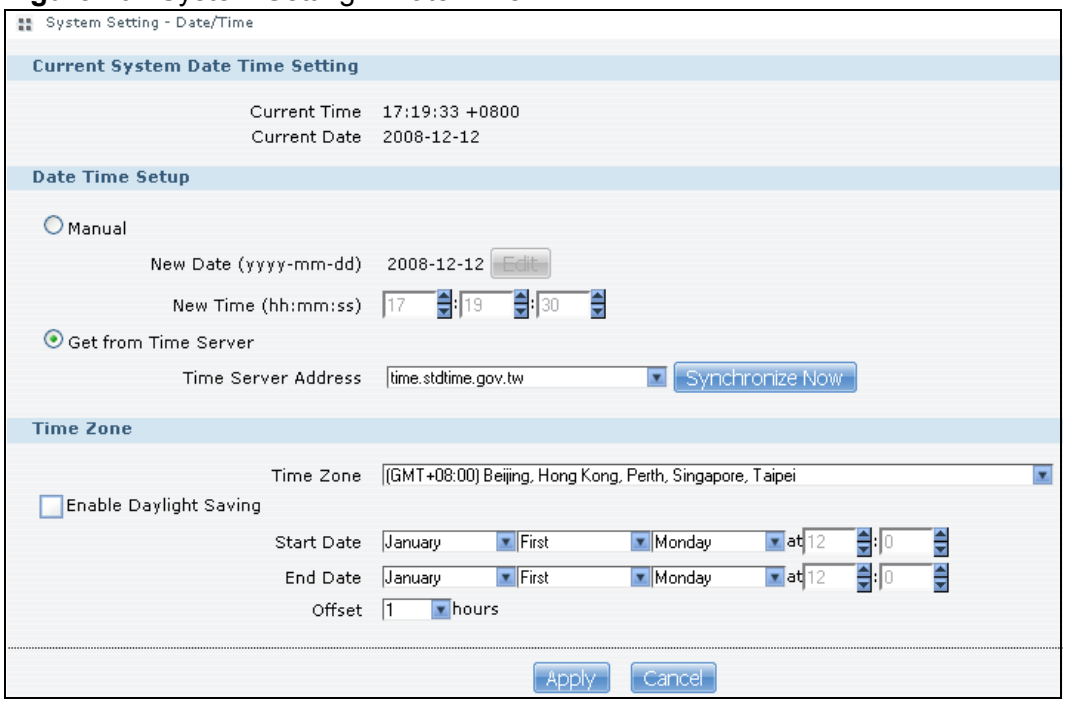
LABEL	DESCRIPTION
Server Name	Enter a name to identify your NSA on the network in this field. You can enter up to 15 alphanumeric characters with minus signs allowed but not as the last character. The name must begin with an alphabetic character (a-z) and is NOT case sensitive.
Description	Add text here to describe the NSA if the **Server Name** field was not enough. Use up to 61 characters. You can use all characters except the following: /\:|[]<>+;,?=*"~.
Workgroup Name	Type your workgroup name in this field. A workgroup is a group of computers on a network that can share files.These user accounts are maintained on the NSA. You can enter up to 15 alphanumeric characters with minus signs allowed but not as the last character. The name must begin with an alphabetic character (a-z) and is NOT case sensitive.
Prevent NSA From Being Master Browser	Select this option if computers in your workgroup are named with non-English characters (such as Chinese and Russian). When you perform a search in the workgroup, this option allows you to locate computers named with non-English characters.
Apply	Click this to save your changes.
Reset	Click this to restore previously saved settings.

4.3 The Date/Time Screen

Use this screen to select a time zone and a time server from which your NSA can get the time and date. This time is then used in NSA logs and alerts.

Click the **System Setting** link in the navigation panel and then click the **Date/Time** link to access the **Date/Time** screen.

Figure 20 System Setting > Date/Time


System Setting - Date/Time
Current System Date Time Setting
Current Time 17:19:33 +0800
Current Date 2008-12-12
Date Time Setup
Manual
New Date (yyyy-mm-dd) 2008-12-12 Edit
New Time (hh:mm:ss) 17 : 19 : 30
Get from Time Server
Time Server Address time.stdtime.gov.tw Synchronize Now
Time Zone
Time Zone (GMT+08:00) Beijing, Hong Kong, Perth, Singapore, Taipei
Enable Daylight Saving
Start Date January First Monday at 12 : 0
End Date January First Monday at 12 : 0
Offset 1 hours
Apply
Cancel

The following table describes the labels in this screen.

Table 15 System Setting > Date/Time

LABEL	DESCRIPTION
Current System Date Time Setting	
Current Time	This field displays the time of your NSA.
Current Date	This field displays the date of your NSA.
Date Time Setup	
Manual	Select this radio button to enter the time and date manually. When you enter the time settings manually, the NSA uses the new setting once you click **Apply**. Note: If you enter time settings manually, they revert to their defaults when power is lost.

Table 15 System Setting > Date/Time (continued)

LABEL	DESCRIPTION
New Date (yyyy-mm-dd)	This field displays the last updated date from the time server or the last date configured manually. When you set **Time and Date Setup** to **Manual**, enter the new date in this field and then click **Apply**.
New Time (hh:mm:ss)	This field displays the last updated time from the time server or the last time configured manually. When you set **Time and Date Setup** to **Manual**, enter the new time in this field and then click **Apply**.
Get from Time Server	Select this check box to have the NSA get the time and date from the time server you select in the **Time Server Address** field.
Time Server Address	Select a time server from the drop-down list box or select **Specify my own time server** and enter the time server you wish to use in the field below. Check with your ISP/network administrator if you are unsure of this information.
Synchronize Now	Click this for the NSA to retrieve the correct time from the configured time server right away.
Time Zone	
Time Zone	Choose the time zone of your location. This will set the time difference between your time zone and Greenwich Mean Time (GMT).
Enable Daylight Saving	Daylight saving is a period from late spring to early fall when many countries set their clocks ahead of normal local time by one hour to give more daytime light in the evening. Select this option if you use Daylight Saving Time.
Start Date	Configure the day and time when Daylight Saving Time starts if you selected **Enable Daylight Saving**. The hour field uses the 24 hour format. Here are a couple of examples: Daylight Saving Time starts in most parts of the United States on the second Sunday of March. Each time zone in the United States starts using Daylight Saving Time at 2 A.M. local time. So in the United States you would use **March, Second**, **Sunday**, at **2**:**00**. Daylight Saving Time starts in the European Union on the last Sunday of March. All of the time zones in the European Union start using Daylight Saving Time at the same moment (1 A.M. GMT or UTC). So in the European Union you would select **March**, **Last**, **Sunday**. The time you specify depends on your time zone. In Germany for instance, you would type 2 because Germany's time zone is one hour ahead of GMT or UTC (GMT+1).

Table 15 System Setting > Date/Time (continued)

LABEL	DESCRIPTION
End Date	Configure the day and time when Daylight Saving Time ends if you selected **Enable Daylight Saving**. The **o'clock** field uses the 24 hour format. Here are a couple of examples: Daylight Saving Time ends in the United States on the first Sunday of November. Each time zone in the United States stops using Daylight Saving Time at 2 A.M. local time. So in the United States you would select **November**, **First**, **Sunday**, at **2**:**00**. Daylight Saving Time ends in the European Union on the last Sunday of October. All of the time zones in the European Union stop using Daylight Saving Time at the same moment (1 A.M. GMT or UTC). So in the European Union you would select **October**, **Last**, **Sunday**. The time you specify depends on your time zone. In Germany for instance, you would type 2 because Germany's time zone is one hour ahead of GMT or UTC (GMT+1).
Offset	Specify by how many hours to change the time for Daylight Saving Time.
Apply	Click this to save your changes. If you configured a new time and date, Time Zone and Daylight Saving at the same time, all of the settings take affect.
Cancel	Click this to restore your previously saved settings.

5

Storage

5.1 Overview

Several NSA features require a valid internal volume. This chapter covers the management of volumes and disks (both internal and external).

Use the **Storage** screen (Section 5.2 on page 112) to display information on all volumes, create internal and external volumes, and configure the volume's properties.

5.1.1 What You Need to Know About Storage

Volume

A volume is a storage area on a disk or disks. You can create volumes on the internal disks and external disks attached to the USB port(s). You can spread a volume across internal disks but not between internal and external disks.

Storage Methods

RAID (Redundant Array of Independent Disks) or JBOD (Just a Bunch of Data) is the storage method that the NSA uses. The storage method you use depends on how many disks you have and how many volumes you want to create. It's important that you consider this carefully as all data is deleted when you re-create a volume. See Figure 5.6.2 on page 121 for details on choosing a storage method.

Finding Out More

See Section 5.6 on page 120 for more technical background information on storage.

5.2 The Storage Screen

The **Storage** screen allows you to create and edit volumes in the NSA.

5.2.1 Disk Replacement Restrictions

See the Quick Start Guide for information on replacing disks in the NSA. When replacing a disk in a degraded or down RAID volume, the new disk must be at least the same size or bigger than the other disks that are already in the RAID volume, so as all data in the volume can be restored.

For example, if you have RAID with 250 GB disks, you must put in a 250 GB or bigger disk as a replacement in order to restore all original data in that volume. If you put a bigger disk, the extra space on the disk will not be used.

Note: The NSA automatically repairs a degraded RAID if you insert an empty disk without an existing file system. Otherwise, when you replace a disk you must go to the **Storage** > **Internal Volume** > **RAID** screen, select the degraded array, and click **Repair**.

Resynchronizing or Recovering a RAID 1 Volume

Resynchronizing or recovering a RAID 1 volume that was down is done block-by-block, so the time it takes depends more on the size of your hard drive(s) than the amount of data you have on them.

Note: Do not restart the NSA while the NSA is resynchronizing or recovering a volume as this will cause the synchronization to begin again after the NSA fully reboots.

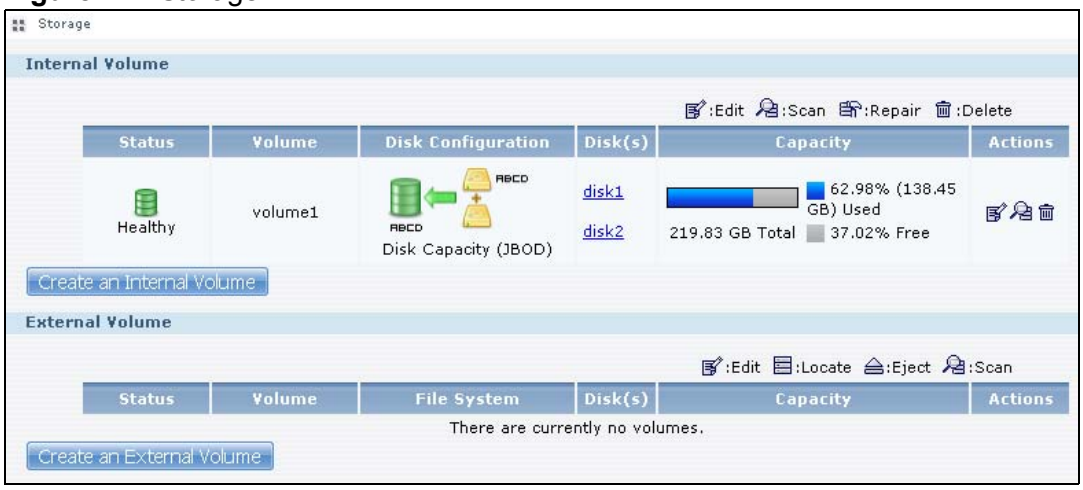
Note: You can access data on a RAID volume while it is resychronizing or recovering, but it is not recommended.

5.2.2 Displaying the Storage Screen

Click **Storage** in the navigation panel to display the following screen. Use this screen to display internal and external volumes on the NSA.

Note: It is recommended to scan the volume every three months or 32 reboots.

Figure 21 Storage



The following table describes the labels in this screen.

Table 16 Storage

LABEL	DESCRIPTION
Internal/External Volume	These tables display information on all internal volumes (created on NSA internal disk drives) and external volumes (created on external disk drives attached to the NSA USB ports).
Create an Internal Volume	Click this to format internal hard drives and create a new volume. All data on the disk(s) will be lost.
Create an External Volume	Click this to format an external hard drive and create a new volume. All data on the disk will be lost.
Status	This field shows whether the volume is **Healthy, Resync, Recovering, Degraded,** or **Down**. See Section 5.3.1 on page 116 for details on a volume's status.
Volume	The NSA creates the volume name automatically. You can edit it.
Disk Configuration	This field shows which disks and data storage system the volume is using.
File System	This field displays the file system that an external (USB) volume is using.

Table 16 Storage (continued)

LABEL	DESCRIPTION
Disk(s)	Click or roll your mouse over a link in this column to display the following details about the hard drive located in the corresponding hard drive bay. Type: Whether it is an internal or external (USB) hard drive. Model Name: This is the hard disk number that identifies the disk. File System: The file system that an external volume is using Capacity: The total storage space on the disk.
Capacity	This field shows total disk size, the percentage of the volume being used and the percentage that is available.
Actions	This field displays icons allowing you to edit, scan, repair or delete a volume. You can also locate or eject an external volume. Note: If you delete a volume, all data in the volume disk(s) is erased.

You see a warning screen before you delete a volume.

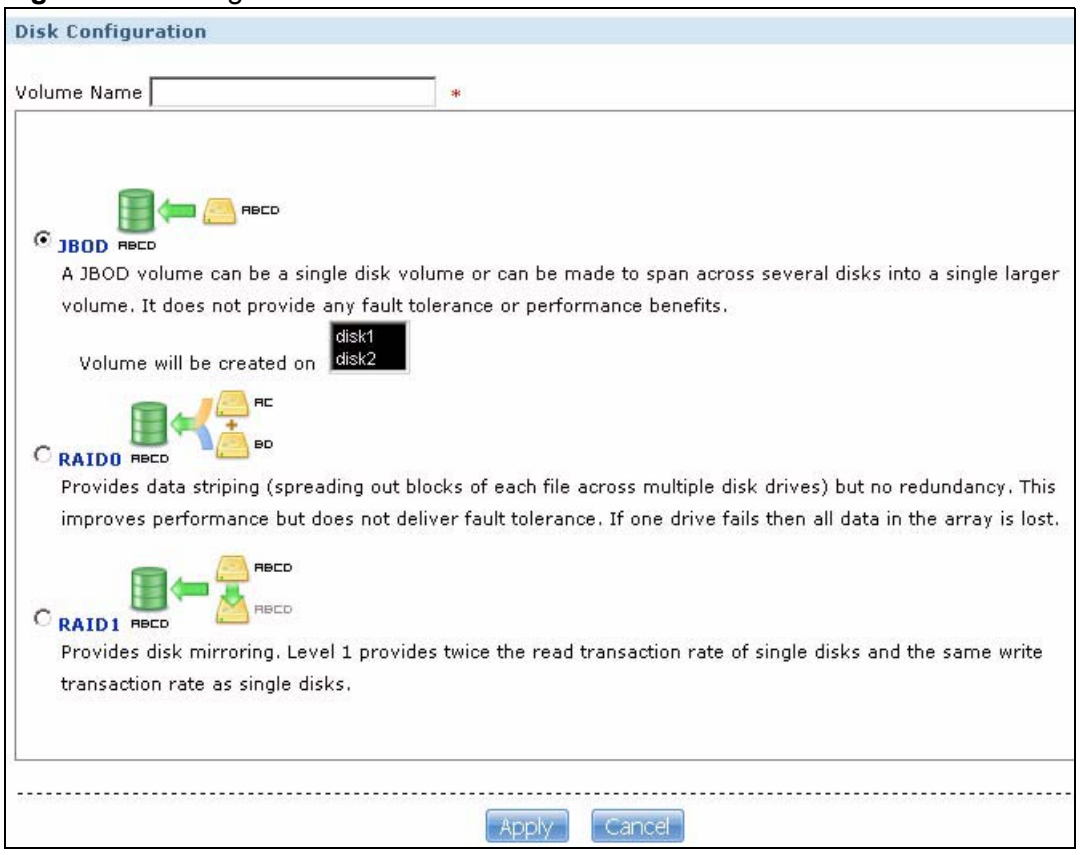
Figure 22 Delete a Volume Warning Screen

5.3 Creating an Internal Volume

Click the **Create an Internal Volume** button in the **Storage** screen as shown in Figure 21 on page 113 to open the following screen. Use this screen to create a new NSA internal disk drive volume.

Note: Creating a volume formats the hard drive. All data on the disk will be lost.

Figure 23 Storage > Create an Internal Volume


Disk Configuration
Volume Name
*
JBOD
A JBOD volume can be a single disk volume or can be made to span across several disks into a single larger volume. It does not provide any fault tolerance or performance benefits.
Volume will be created on
disk1
disk2
RAID0
Provides data striping (spreading out blocks of each file across multiple disk drives) but no redundancy. This improves performance but does not deliver fault tolerance. If one drive fails then all data in the array is lost.
RAID1
Provides disk mirroring. Level 1 provides twice the read transaction rate of single disks and the same write transaction rate as single disks.
Apply
Cancel

The following table describes the labels in this screen.

Table 17 Storage > Create an Internal Volume

Volume Name	Type a volume name from 1 to 31 characters. To avoid confusion, it is highly recommended that each volume use a unique name. Acceptable characters are all alphanumeric characters, " " [spaces], "_" [underscores], and "." [periods]. The first character must be alphanumeric (A-Z 0-9). The last character cannot be a space " ". For an external volume, type a volume name from 1 to 32 single-byte (no Chinese characters allowed for example) ASCII characters. The name cannot be the same as another existing external volume.
JBOD	Use this if you want maximum storage capacity and/or you have other means of protecting your data. JBOD is the only option if you only have one disk installed. With two disks, you can choose to create a JBOD volume on one of the disks or both.
RAID 0	Use this if you want maximum speed for your disks, and/or you have other means of protecting your data. This is only available when you have two hard disks installed.
RAID 1	Use this if you want to mirror all data on one disk to the other disk. This is only available when you have two hard disks installed.
Volume will be created on	This field lists all hard disks installed inside the NSA. Select which disks should make up this volume. A disk can only belong to one volume. You do not need to select anything if only one hard disk is installed.
Apply	Click this to save your changes and create the volume.
Cancel	Click this to exit this screen without saving your changes or creating a volume.

Note: Once you create the first volume on the NSA, it is recommended to restart the NSA for better performance.

5.3.1 Volume Status

You (the administrator) can see the status of a volume in the **Status** or **Storage** screens.

The NSA has the following classifications for the status of a volume:

- **Healthy** if all disks in the volume are OK and the file system is functioning properly.
- **OK** means the USB connected device is functioning properly.
- **Resync** when you create a RAID volume.

- **Recovering** appears when repairing a RAID 1 volume. (A RAID1 volume was once degraded, but you have installed a new disk and the NSA is restoring the RAID1 volume to a healthy state.)
- **Degraded** when a volume is currently down, but can be fixed. Data access may be slower from a degraded volume, so it's recommended that you replace the faulty disk and repair the volume as soon as you can.
- **Inactive** when a disk is missing from a RAID 0 volume or a two-disk JBOD volume. The volume is unusable. If you removed one of the disks you should be able to re-install it and use the volume again (as long as you did not change anything on the disk). If a disk has failed, you need to replace it and re-create the whole volume. All data will be lost. See page 232 for how to install or replace a hard drive.
- **Down** when a volume is down and can not be fixed.

A down RAID volume cannot be used until you repair or replace the faulty disk(s) in the volume. Degraded means one of the disks in the RAID volume is not available but the volume can still be used. For a degraded volume, you should replace the faulty disk as soon as possible to obtain previous performance. See your Quick Start Guide for more information on replacing a disk.

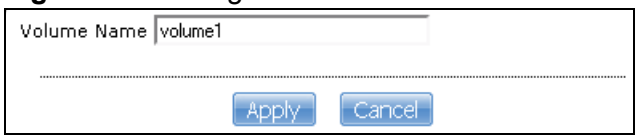
If it's down, then the only indication is that you can no longer transfer files to/from the shares in the down volume. If it's degraded, then file transfer to/from the shares in the degraded volume will be slower.

Note: There is no explicit message from CIFS that tells users their volume is degraded or down.

5.4 Editing a Volume

Click an internal volume's **Edit** icon in the **Storage** screen as shown in Figure 21 on page 113 to open the following screen. Use this screen to change the volume's name.

Figure 24 Storage > Edit



The following table describes the labels in this screen.

Table 18 Storage > Edit

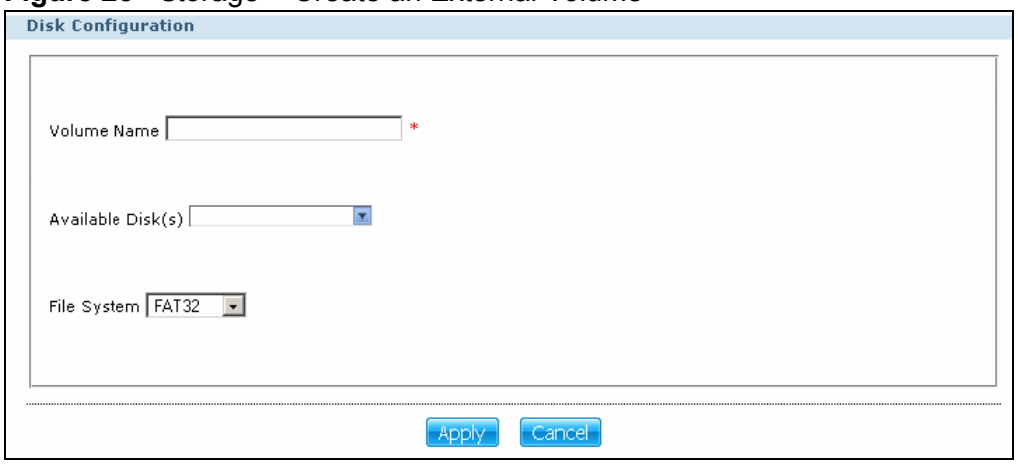
LABEL	DESCRIPTION
Volume Name	For an internal volume, type a volume name from 1 to 31 characters. To avoid confusion, it is highly recommended that each volume use a unique name. Acceptable characters are all alphanumeric characters and " " [spaces], "_" [underscores], and "." [periods]. The first character must be alphanumeric (A-Z 0-9). The last character cannot be a space " ". For an external volume, type a volume name from 1 to 32 single-byte (no Chinese characters allowed for example) ASCII characters. The name cannot be the same as another existing external volume.
Apply	Click this to save your changes and rename the volume.
Cancel	Click this to close this screen without saving your changes.

5.5 Creating an External Volume

Click the **Create a New External Volume** button in the **Storage** screen as shown in Figure 21 on page 113 to open the following screen. Use this screen to create a new NSA external disk drive volume.

Note: Creating a volume formats the drive. All data on the disk will be lost.

Figure 25 Storage > Create an External Volume



The following table describes the labels in this screen.

Table 19 Storage > Create an External Volume

LABEL	DESCRIPTION
Volume Name	Type a volume name from 1 to 31 characters. The name cannot be the same as another existing external volume. Acceptable characters are all alphanumeric characters and " " [spaces], "_" [underscores], and "." [periods]. The first character must be alphanumeric (A-Z 0-9). The last character cannot be a space " ".
Available Disk(s)	Select the external (USB) device upon which you want to create the volume.
File System	Select the file system you want the new volume to use. Windows file systems **FAT32**: Newer, and more efficient than FAT16. Supports a volume size of up to 2 TB (Tera Bytes) and individual file sizes of up to 4 GB. **FAT16**: Compatible with older Windows operating systems. Supports volume and file sizes of up to 2 GB. Linux file systems **EXT2**: Older file system. **EXT3**: The same as EXT2, but adds a journaled file system and is more robust. **ReiserFS**: Offers better performance for small files.
Apply	Click this to save your changes and create the volume.
Cancel	Click this to exit this screen without saving changes.

5.5.1 External Disks

You may connect USB storage devices that support the following file systems to the NSA.

- Windows File Systems: NTFS, FAT32 and FAT16.
- Linux File Systems: ReiserFS, EXT2, and EXT3.

5.6 Storage Technical Reference

This section provides some background information about the topics covered in this chapter.

5.6.1 Volumes and RAID

A volume is a storage area on a disk or disks. You can create volumes on the internal disks and external disks attached to the USB port(s). You can spread a volume across internal disks but not between internal and external disks.

RAID (Redundant Array of Independent Disks) or JBOD is the storage method that the NSA uses. The storage method you use depends on how many disks you have and how many volumes you want to create. It's important that you consider this carefully as all data is deleted when you re-create a volume.

Note: Back up your data before deleting or re-creating a volume!

For example if you originally have one disk configured as JBOD, and you then install another disk and want to configure the two disks to use RAID 1, you should first back up all your data on the two disks (see the Memeo Autobackup utility on the included CD) and then restore your data later after you create the new volume type.

Below is a table that summarizes some attributes of the various RAID levels as supported on the NSA. For capacity and storage efficiency, "S" is the size of the smallest drive in the array, and "N" is the number of drives in the array.

Storage efficiency assumes all drives are of identical size.

Performance rankings are approximations.

Table 20 RAID Quick Comparison

RAID Level	0	1
Number of Disks	2	2
Capacity	S*N	S*N/2
Storage Efficiency	100%	50%
Fault Tolerance	None	YYYY
Availability	Y	YYYY
Read Performance	YYYY	YYY
Write Performance	YYYY	YYY

5.6.2 Choosing a Storage Method for a Volume

The following is a guide to help you choose a storage method for the various number of disks supported on the NSA. See Section 5.6.3 on page 121 for theoretical background on JBOD and the RAID levels used on the NSA. Typical applications for each method are also shown there.

One Disk

If you only have one disk, you must use JBOD. All disk space is used for your data - none is used for backup. If the disk fails, then you lose all the data on that volume (disk). You can add another disk to your one-disk JBOD volume later without having to re-create shares, access rights, and so on. Alternatively, you could create a different JBOD volume if you install a second disk. (and create new shares, access rights and so on).

Two Disks:

You may choose JBOD, RAID 0 or RAID 1. With two disks you could create:

- up to two JBOD volumes
- one RAID 0 or RAID 1 volume
  - Choose JBOD for flexibility and maximum usage of disk space for data.
  - Choose RAID 0 if performance matters more than data security. RAID 0 has the fastest read and write performance but if one disk fails you lose all your data on the volume. It has fast performance as it can read and write to two disks simultaneously. Performance may matter more than data security to gamers for example. This method may also be acceptable for data that is already backed up somewhere else.
- Choose RAID 1 if data security is more important than performance. Since RAID 1 mirrors data onto a second disk, you can recover all data even if one disk fails, but the performance is slower than RAID 0.

5.6.3 Storage Methods

This section contains theoretical background on JBOD and the RAID levels used on the NSA. Redundant Array of Independent Disks (RAID) is a method of storing data on multiple disks to provide a combination of greater capacity, reliability, and/or speed. JBOD (Just a Bunch Of Disks) is not a RAID storage method but it is included in this discussion.

These are some terms that you need to know in order to understand storage systems.

- Mirroring

  In a RAID system using mirroring, all data in the system is written simultaneously to two hard disks instead of one. This provides 100% data redundancy as if one disk fails the other has the duplicated data. Mirroring setups always require an even number of drives.

- Duplexing

  Like in mirroring, all data is duplicated onto two distinct physical hard drives but in addition it also duplicates the hardware that controls the two hard drives (one of the drives would be connected to one adapter and the other to a second adapter).

- Striping

  Striping is the breaking up of data and storing different data pieces on each of the drives in an array. This allows faster reading and writing as it can be done simultaneously across disks. Striping can be done at the byte level, or in blocks. Byte-level striping means that the first byte of the file is sent to the first drive, then the second to the second drive, and so on. Block-level striping means that each file is split into blocks of a certain size and those are distributed to the various drives. The size of the blocks used is also called the stripe size (or block size).

- Parity

  In mirroring 50% of the drives in the array are reserved for duplicate data. Parity is another way to allow data recovery in the event of disk failure using calculations rather than duplicating the data. If you have 'n' pieces of data, parity computes an extra piece of data. The'n+1' pieces of data are stored on 'n+1'drives. If you lose any one of the 'n+1' pieces of data, you can recreate it from the 'n' that remain, regardless of which piece is lost. Parity protection is used with striping, and the "n" pieces of data are typically the blocks or bytes distributed across the drives in the array. The parity information can either be stored on a separate, dedicated drive, or be mixed with the data across all the drives in the array.

Note: In the following figures, A1, A2, A3 and so on are blocks of data from the A file. Similarly, B1, B2, B3 and C1, C2, C3 ar blocks of data from the B and C files.

JBOD

JBOD allows you to combine multiple physical disk drives into a single virtual one, so they appear as a single large disk. JBOD can be used to turn multiple different-sized drives into one big drive. For example, JBOD could convert 80 GB and 100 GB drives into one large logical drive of 180 GB. If you have two JBOD volumes (with one disk in each), a failure of one disk (volume) should not affect the other volume (disk). JBOD read performance is not as good as RAID as only one disk can be read at a time and they must be read sequentially. The following figure

shows disks in a single JBOD volume. Data is not written across disks but written sequentially to each disk until it's full.

Table 21 JBOD

A1	**B1**
A2	**B2**
A3	**B3**
A4	**B4**
DISK 1	**DISK 2**

RAID 0

RAID 0 spreads data evenly across two or more disks (data striping) with no mirroring nor parity for data redundancy, so if one disk fails the entire volume will be lost. The major benefit of RAID 0 is performance. The following figure shows two disks in a single RAID 0 volume. Data can be written and read across disks simultaneously for faster performance.

Table 22 RAID 0

A1	**A2**
A3	**A4**
A5	**A6**
A7	**A8**
DISK 1	**DISK 2**

RAID 0 capacity is the size of the smallest disk multiplied by the number of disks you have configured at RAID 0 on the NSA. For example, if you have two disks of sizes 100 GB and 200 GB respectively in a RAID 0 volume, then the maximum capacity is 200 GB (2 * 100 GB, the smallest disk size) and the remaining space (100 GB) is unused.

Typical applications for RAID 0 are non-critical data (or data that changes infrequently and is backed up regularly) requiring high write speed such as audio, video, graphics, games and so on.

RAID 1

RAID 1 creates an exact copy (or mirror) of a set of data on another disk. This is useful when data backup is more important than data capacity. The following

figure shows two disks in a single RAID 1 volume with mirrored data. Data is duplicated across two disks, so if one disk fails, there is still a copy of the data.

Table 23 RAID 1

A1	A1
A2	A2
A3	A3
A4	A4
DISK 1	DISK 2

As RAID 1 uses mirroring and duplexing, a RAID 1 volume needs an even number of disks (two or four for the NSA).

RAID 1 capacity is limited to the size of the smallest disk in the RAID array. For example, if you have two disks of sizes 150 GB and 200 GB respectively in one RAID 1 volume, then the maximum capacity is 150 GB and the remaining space (50 GB) is unused.

Typical applications for RAID 1 are those requiring high fault tolerance without need of large amounts of storage capacity or top performance, for example, accounting and financial data, small database systems, and enterprise servers.

RAID and Data Protection

If a hard disk fails and you're using a RAID 1 volume, then your data will still be available (but at degraded speeds until you replace the hard disk that failed and resynchronize the volume). However, RAID cannot protect against file corruption, virus attacks, files incorrectly deleted or modified, or the NSA malfunctioning. Here are some suggestions for helping to protect your data.

- Place the NSA behind a hardware-based firewall. It should have stateful packet inspection, IDP (Intrusion Detection and Prevention), and anti-virus (like ZyXEL's ZyWALL UTM products for example).
- Use anti-virus software on your computer to scan files from others before saving the files on the NSA.
- Keep another copy of important files (preferably in another location).

6 Network

6.1 Overview

This chapter discusses the network configuration screens. The **Network** screens allow you to configure TCP/IP and PPPoE settings for the NSA.

6.1.1 What You Can Do in the Network Screens

- Use the **TCP/IP** screen (Section 6.2 on page 126) to assign the NSA a dynamic or static IP address and DNS information
- Use the **PPPoE** screen (Section 6.3 on page 129) to configure PPPoE settings for a direct Internet connection.

6.1.2 What You Need to Know About Network

IP Address

The NSA needs an IP address to communicate with other devices on your network. The NSA can get an IP address automatically if you have a device on your network that gives them out. Or you can assign the NSA a static (fixed) IP address.

DNS Server Address

A DNS (Domain Name System) server maps domain names (like www.zyxel.com) to their corresponding numerical IP addresses. This lets you use domain names to access web sites without having to know their IP addresses. The NSA can receive the IP address of a DNS server automatically (along with the NSA's own IP address). You can also manually enter a DNS server IP address in the NSA.

Jumbo Frames

Jumbo frames are Ethernet frames larger than 1500 bytes. They enable data transfer with less overhead. The bigger the frame, the better the network performance. Your network equipment such as computers, switches and routers must be capable of supporting jumbo frames. You also need to enable jumbo frames in all related network devices.

PPPoE

Point-to-Point Protocol over Ethernet (PPPoE) allows the NSA to establish a direct Internet connection if you do not have a router. PPPoE is a dial-up connection. You need a username and password from your Internet Service Provider (ISP) to set up the connection.

6.2 The TCP/IP Screen

Use the **TCP/IP** screen to have the NSA use a dynamic or static IP address, subnet mask, default gateway and DNS servers.

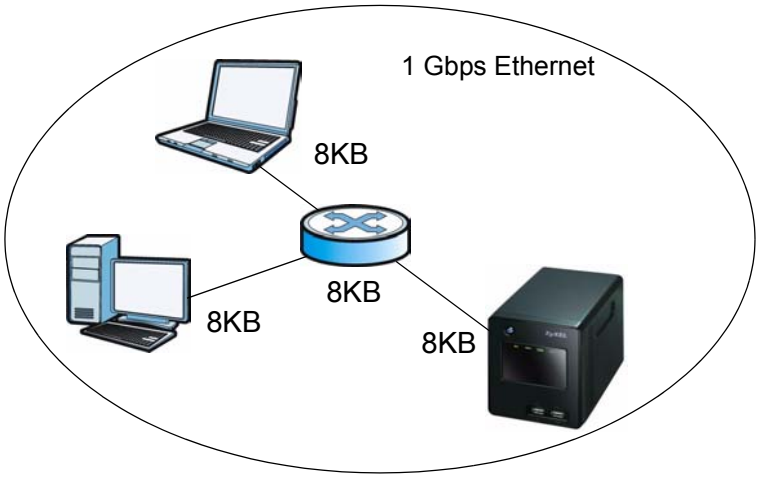
6.2.1 Jumbo Frames

To use jumbo frames, your LAN must support 1 Gbps transmissions (Gigabit Ethernet). All of your network devices (computer Ethernet cards and switches, hubs, or routers) must also support the same size of jumbo frames that you specify in the NSA.

Note: If you enable jumbo frames on the NSA in a network that does not support them, you will lose access to the NSA. If this occurs, you will have to restore the factory default configuration. Push the **RESET** button on the NSA's rear panel and release it after you hear a beep.

In the following example, the NSA has jumbo frames enabled and set to 8KB frames. This means the computer, notebook computer, and switch must also have jumbo frames enabled and be capable of supporting 8KB frames.

Figure 26 Jumbo Frames

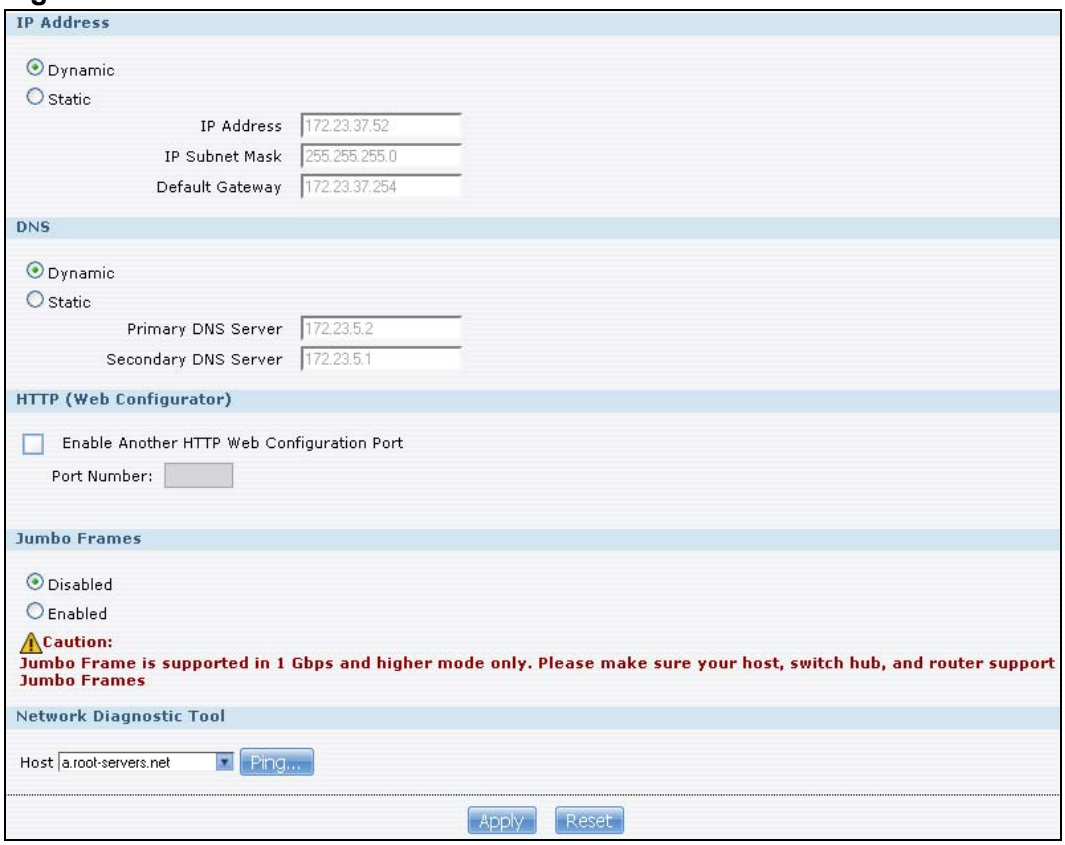


6.2.2 Configuring the TCP/IP Screen

Click **Network > TCP/IP** in the navigation panel to open the following screen.

Note: If you change the NSA's IP address, you need to log in again after you apply changes.

Figure 27 Network > TCP/IP



The following table describes the labels in this screen.

Table 24 Network > TCP/IP

LABEL	DESCRIPTION
IP Address	
Dynamic	Select this option to have the NSA get IP address information automatically. If no IP address information is assigned, the NSA uses Auto-IP to assign itself an IP address and subnet mask. For example, you could connect the NSA directly to your computer. If the computer is also set to get an IP address automatically, the computer and the NSA will choose addresses for themselves and be able to communicate.
Static	Select this option for the NSA to use fixed TCP/IP information. You must fill in the following fields.
IP Address	Type an IP address in this field.

Table 24 Network > TCP/IP (continued)

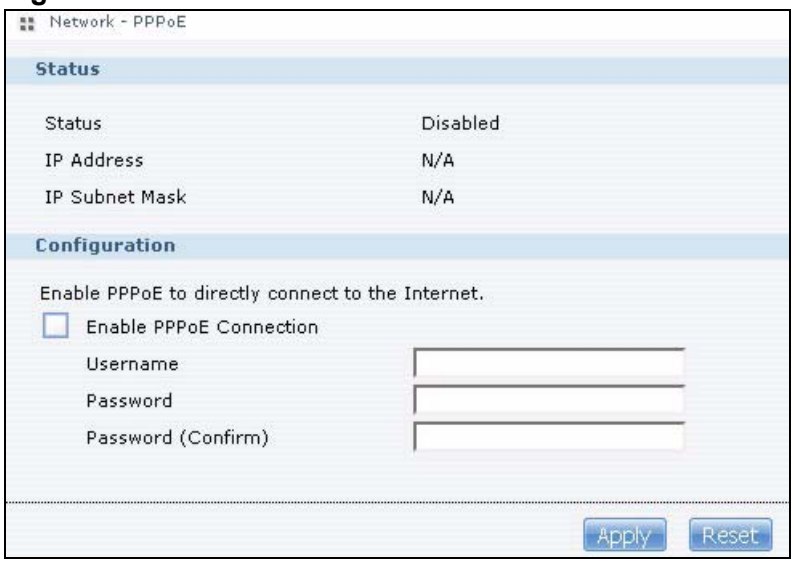
LABEL	DESCRIPTION
IP Subnet Mask	Type an IP subnet mask in this field.
Default Gateway	Type a default gateway address in this field.
DNS	DNS (Domain Name System) is for mapping a domain name to its corresponding IP address and vice versa. If you have the IP address(es) of the DNS server(s), enter them.
Dynamic	Select the option to have the NSA get a DNS server address automatically.
Static	Select this option to choose a static DNS server address. Type the DNS server IP address(es) into the fields below.
Primary DNS Server	Type a primary DNS server IP address.
Secondary DNS Server	Type a secondary DNS server IP address.
HTTP (Web Configurator)	
Enable Another Web Configuration Port	Select this to configure an additional HTTP port for accessing the web configurator. Specify a number in the **Port Number** field.
Jumbo Frames	Jumbo frames improve network performance. You must have a 1 Gbps (Gigabit Ethernet) network that supports jumbo frames. Select the largest size of frame that all of your network devices (including computer Ethernet cards and switches, hubs, or routers) support. Note: If you enable jumbo frames on the NSA in a network that does not support them, you will lose access to the NSA. If this occurs, you will have to restore the factory default configuration. Push the **RESET** button on the NSA's rear panel and release it after you hear a beep.
Network Diagnostic Tool	Use this section to test the network connection to a particular IP address or domain name. Select an address or type it into the field. Then click **Ping** to have the NSA send a packet to test the network connection. If the NSA is able to "ping" the host, the network connection is OK.
Apply	Click this to save your TCP/IP configurations. After you click **Apply**, the NSA restarts. Wait until you see the **Login** screen or until the NSA fully boots and then use the NDU to rediscover it.
Reset	Click this to restore your previously saved settings.

6.3 The PPPoE Screen

Click **Network > PPPoE** in the navigation panel to open the following screen.

PPPoE allows the NSA to establish a direct Internet connection.

Figure 28 Network > PPPoE



The following table describes the labels in this screen.

Table 25 Network > PPPoE

LABEL	DESCRIPTION
Status	
Status	This field displays the status of PPPoE connection.
IP Address	This field displays the IP address of your PPPoE connection.
IP Subnet Mask	This field displays the IP subnet mask of your PPPoE connection.
Configuration	
Enable PPPoE Connection	Select this option to establish a direct Internet connection for the NSA. You need to enter the username and password as given by your ISP.
Username	Enter the username exactly as your ISP assigned. If assigned a name in the form user@domain where domain identifies a service name, then enter both components exactly as given.
Password	Enter the password associated with the username above.
Password (Confirm)	Retype the password for confirmation.
Apply	Click this to save your changes.
Reset	Click this to restore previously saved settings.

7

Applications

7.1 Overview

This chapter discusses the features in the **Application** screens. The NSA contains various applications for file sharing and downloading.

7.1.1 What You Can Do in the Application Screens

- Use the **FTP** screen (Section 7.2 on page 133) to configure settings for FTP file transfers to/from the NSA.
- Use the **Media Server** screen (Section 7.3 on page 135) to share files with media clients.
- Use the **Download Service** screen (Section 7.4 on page 138) to download files from the Internet.
- Use the **Web Publishing** screen (Section 7.5 on page 152) to publish shares for people to access files using a web browser.
- Use the **Broadcatching** screen (Section 7.6 on page 158) to download frequently updated digital content like TV programs, radio talk shows, Podcasts (audio files), and blogs.
- Use the **Print Server** screen (Section 7.7 on page 162) to share a printer.
- Use the **Copy/Sync Button** screen (Section 7.8 on page 164) to transfer files between a USB device and the NSA.
- Use the **Flickr/YouTube** screen (Section 7.9 on page 169) to upload photos and music to your Flickr and YouTube accounts.
- Use the **FTP Uploadr** screen (Section 7.10 on page 178) to upload files to your FTP servers.

7.1.2 What You Need to Know About Applications

FTP

File Transfer Protocol (FTP) is a file transfer service that operates on the Internet. A system running the FTP server accepts commands from a system running an FTP client. FTP is not a secure protocol. Your file transfers could be subject to snooping.

FTPS (File Transfer Protocol over TLS)

File Transfer Protocol over TLS (FTPS) is a file transfer service that uses TLS (Transport Layer Security) for secure transfers across the Internet.

Media Server

The media server feature lets anyone on your network play video, music, and photos from the NSA (without having to copy them to another computer). The NSA can function as a DLNA-compliant media server and/or an iTunes server. The NSA streams files to DLNA-compliant media clients or computers using iTunes. The Digital Living Network Alliance (DLNA) is a group of personal computer and electronics companies that works to make products compatible in a home network.

iTunes Server

The NSA iTunes server feature lets you use Apple's iTunes software on a computer to play music and video files stored on the NSA. You can download iTunes from www.apple.com.

Download Service

The NSA's download service downloads files from the Internet directly to the NSA. You do not have to download to your computer and then copy to the NSA. This can free up your computer's system resources.

The NSA can download using these protocols.

- HTTP: The standard protocol for web pages.
- FTP: A standard Internet file transfer service.
- BitTorrent: A popular distributed peer-to-peer files sharing protocol.

BitTorrent

The NSA includes a BitTorrent client for fast downloading and sharing of large files (such as educational public domain videos). With BitTorrent, you share while you're downloading the file. BitTorrent breaks up the file and distributes it in hundreds of chunks. You start sharing the file as soon as you have downloaded a single chunk.

Web Publishing

Web publishing lets you "publish" shares (containing folders and files) on the NSA so people can access the files using a web browser without having to log into the

My NSA screens. This way you can share files with others without them having to know and enter a username and password.

For example, if you want to share photos in a FamilyPhotos share, you could "web publish" it and others could use a web browser to access the photos at http://my-NSA's-IP-Address/MyWeb/FamilyPhotos.

Broadcatching

Broadcatching is the downloading of digital content from Internet feeds. Use broadcatching to have the NSA download frequently updated digital content like TV programs, radio shows, podcasts (audio files), and blogs.

RSS

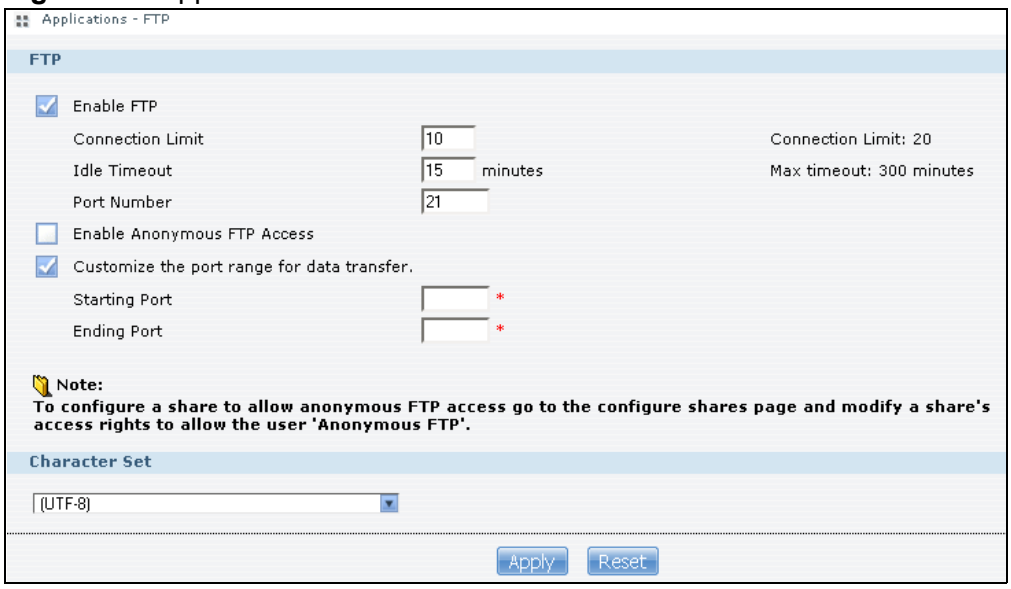
RSS (Really Simple Syndication) is a format for delivering frequently updated digital content. A channel uses a feed to deliver its contents (items). Subscribe the NSA to a feed to be able to download the contents.

7.2 The FTP Screen

Use FTP or FTP over TLS to upload files to the NSA and download files from the NSA. Click **Applications > FTP** to open the following screen.

Note: Your FTP client must be set to use FTP over TLS in order to use FTPS with the NSA. If your FTP client offers multiple types of FTP over TLS, use explicit encryption.

Figure 29 Applications > FTP



The following table describes the labels in this screen.

Table 26 Applications > FTP

LABEL	DESCRIPTION
FTP	
Enable FTP	You can use FTP to send files to the NSA or get files from the NSA. Select this check box to allow users to connect to the NSA via FTP; otherwise clear the check box.
Connection Limit	Enter the maximum number of concurrent FTP connections allowed on the NSA in this field.
Idle Timeout	Enter the length of time that an FTP connection can be idle before timing out.
Enable Anonymous FTP Access	Select this check box to allow any user to log into the NSA using 'FTP' or 'anonymous' as a username and no password. Any other name is considered a username, so must be valid and have a corresponding correct password.
Customize the port range for data transfer	Select this check box to assign a port range for FTP clients to use when downloading files from the NSA using passive mode. The connection limit is restricted to half of the port numbers within the range if this value is smaller than the one configured in the **Connection Limit** field. For example, you specified a port range from 1024 to 1029 and configured 10 in the **Connection Limit** field. The FTP connection limit will only be 3 (6 ports in the range divided by 2) because it is the smaller value.
Starting Port	Enter the first port number in the range. Choose from 1024 to 65535.
Ending Port	Enter the last port number in the range. Choose from 1024 to 65535.
Character Set	The NSA uses UTF-8 (8-bit UCS/Unicode Transformation Format) format for FTP by default. If the NSA's folders, or file names do not display correctly in your FTP client, select the appropriate language encoding here. This setting applies to all FTP client connections to the NSA. It does not affect your Windows/CIFS connections (it will not correct the character display in Windows Explorer).
Apply	Click this to save your changes.
Reset	Click this to restore your previously saved settings.

7.3 The Media Server Screen

The **Media Server** screen allows you to share files with media clients.

7.3.1 Sharing Media Files on Your Network

The media server feature lets anyone on your network play video, music, and photos from the NSA (without having to copy them to another computer). The NSA can function as a DLNA-compliant media server and/or an iTunes server. The NSA streams files to DLNA-compliant media clients or computers using iTunes. The Digital Living Network Alliance (DLNA) is a group of personal computer and electronics companies that works to make products compatible in a home network.

- Publish shares to let others play the contained media files.
- The media server is a convenient way to share files you download using the broadcatching service (see Section 7.6 on page 158).
- Hardware-based media clients like the DMA-1000 can also play the files. See Section 14.4 on page 250 for the supported multimedia file formats.

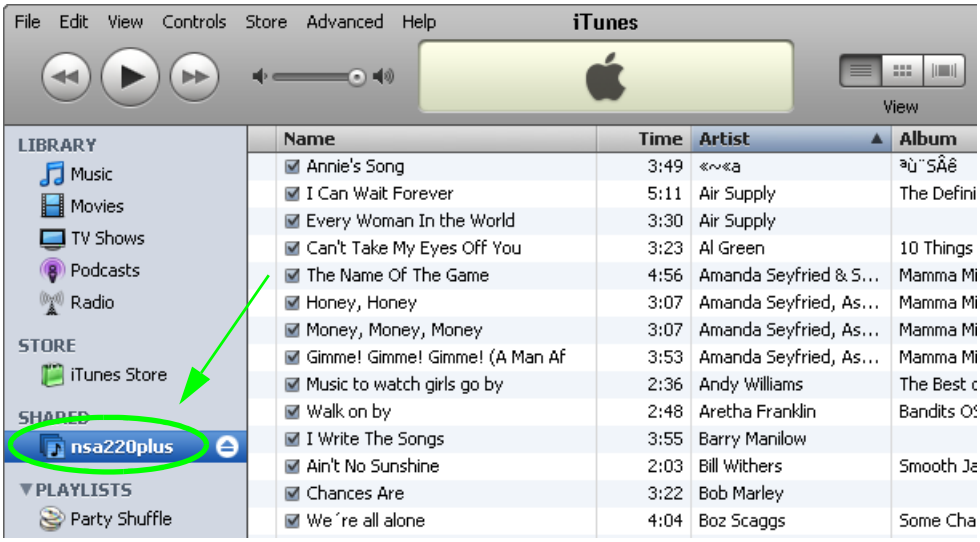
Note: Anyone on your network can play the media files in the published shares. No user name and password or other form of security is used. The media server is enabled by default with the video, photo, and music shares published.

Songs and Videos from the iTunes Store

After using iTunes on your computer to download songs and videos from Apple's iTunes Store, you can copy them to the NSA. Many of these songs and videos have DRM (Digital Rights Management). At the time of writing, you can use your Apple account ID and password to authorize up to a total of five computers to play the files. To authorize a computer, open iTunes and click **Store > Authorize Computer**.

A link for the NSA in iTunes under **SHARED**. Click it to display the NSA's published media files as shown next.

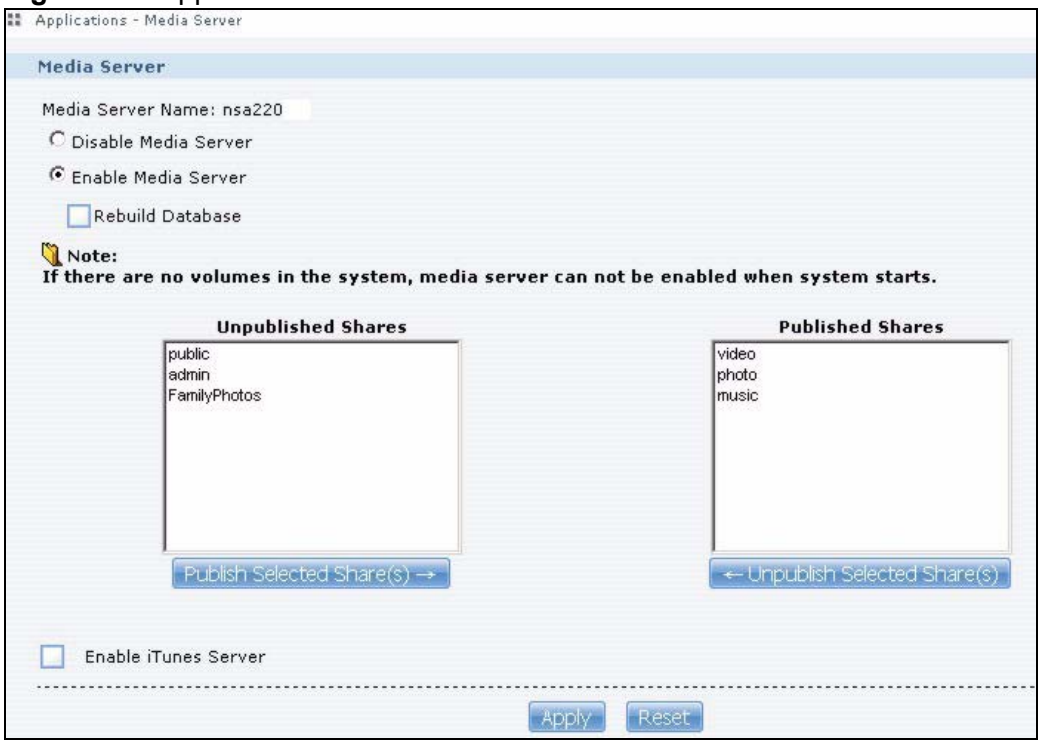
Figure 30 NSA link in iTunes


File Edit View Controls Store Advanced Help
iTunes
View
LIBRARY
Music
Movies
TV Shows
Podcasts
Radio
STORE
iTunes Store
SHARED
nsa220plus
PLAYLISTS
Party Shuffle
Name
Time
Artist
Album
Annie's Song 3:49
I Can Wait Forever 5:11 Air Supply
Every Woman In the World 3:30 Air Supply
Can't Take My Eyes Off You 3:23 Al Green 10 Things
The Name Of The Game 4:56 Amanda Seyfried & S... Mamma Mi
Honey, Honey 3:07 Amanda Seyfried, As... Mamma Mi
Money, Money, Money 3:07 Amanda Seyfried, As... Mamma Mi
Gimme! Gimme! Gimme! (A Man Af 3:53 Amanda Seyfried, As... Mamma Mi
Music to watch girls go by 2:36 Andy Williams
Walk on by 2:48 Aretha Franklin
I Write The Songs 3:55 Barry Manilow
Ain't No Sunshine 2:03 Bill Withers Smooth Ja
Chances Are 3:22 Bob Marley
We´re all alone 4:04 Boz Scaggs Some Cha

7.3.2 Configuring the Media Server Screen

Click **Applications > Media Server** to open the following screen. Use this screen to turn the media server and/or iTunes server on or off and select shares to publish (share with media clients like iTunes).

Figure 31 Applications > Media Server



The following table describes the labels in this screen.

Table 27 Applications > Media Server

LABEL	DESCRIPTION
Media Server Name	This is the name of the NSA media server on the network. It is the same as the NSA's server name. This name lets media clients distinguish between multiple media servers on your network.
Disable / Enable Media Server	Turn on the media server to let (DLNA-compliant) media clients on your network play media files located in the published shares. See Section 14.4 on page 250 for the multimedia file formats iTunes supports.
Rebuild Database	This option is available when you select **Enable Media Server**. Select this option to repair the files on the media server. For example, if the NSA got disconnected while downloading or uploading files, it might corrupt some files on the media server.
Unpublished Shares	This list box displays the shares that the NSA does not share with the media clients.
Publish Selected Share(s)	Select shares in the **Unpublished Shares** box and click this to share the shares with media clients. Use the [SHIFT] key to select a range of entries. Hold down the [CTRL] key to select multiple individual entries.
Published Shares	This list box displays the shares that the NSA shares with the media clients.
Unpublish Selected Share(s)	Select shares in the **Published Shares** box and click this to not share the shares with media clients. Use the [SHIFT] key to select a range of entries. Hold down the [CTRL] key to select multiple individual entries.
Enable iTunes Server	Select this option to let anyone on your network use iTunes to play music and video files in the published shares.
Apply	Click this to save your changes.
Reset	Click this to restore your previously saved settings.

7.4 The Download Service Screen

The **Download Service** screen allows you to download files from the Internet.

7.4.1 Download Service

The NSA's download service downloads files from the Internet directly to the NSA. You do not have to download to your computer and then copy to the NSA. This can free up your computer's system resources. The download service also handles your broadcatching downloads. See Section 7.6 on page 158 for information on broadcatching.

The NSA can download using these protocols.

- HTTP: The standard protocol for web pages.
- FTP: A standard Internet file transfer service.
- BitTorrent: A popular distributed peer-to-peer files sharing protocol.

Note: Do not use the NSA for illegal purposes. Illegal downloading or sharing of files can result in severe civil and criminal penalties. You are subject to the restrictions of copyright laws and any other applicable laws and will bear the consequences of any infringements thereof. ZyXEL bears NO responsibility or liability for your use of the download service feature.

Torrent Files

The NSA needs a ".torrent" file for BitTorrent to download a file. The torrent file gives the NSA information about the file to be downloaded (and shared) and the tracker(s) (computers) that coordinates the distribution of the file.

When you add a BitTorrent download task in the NSA's web configurator screens, you can copy and paste the URL of the torrent file. The NSA automatically downloads the torrent file and saves it in a **torrent** folder within the folder where the NSA stores downloaded files (the **admin** share's **download** folder by default).

If you already have the torrent file saved on your computer, you can just specify its location when adding a download task through the web configurator. Another method is to use FTP or a CIFS program (Windows Explorer for example) to copy the torrent file into the **torrent** folder. The NSA automatically uses the torrent file.

After your BitTorrent download and sharing are finished, you can go to the **incoming** folder within the destination share or folder and delete the .torrent file if you need to free up hard disk space.

7.4.2 Configuring the Download Service Screen

Click **Applications > Download Service** to open the following screen. Use this screen to manage the NSA's file downloads.

Note: By default, the NSA saves downloads in the **admin** share's **download** folder.

Figure 32 Applications > Download Service

The following table describes the labels in this screen.

Table 28 Applications > Download Service

LABEL	DESCRIPTION
Enable Download Service	Use this option (and the **Apply** button) to turn the download service off or on. If you turn off the service, all downloads are paused. The files that were downloading are treated as queued. Turning the download service back on resumes your downloads (or restarts them if they are not able to be resumed).
Enable Download Notify	Use this option (and the **Apply** button) to turn the download service notification off or on. See Section 7.4.5 on page 144 for more details about this feature.
Add	After you find a file to download, copy the file's URL. Then log into the NSA web configurator and go to the **Applications > Download Server** screen and click this button. A screen opens where you create a new download task. You can paste the file's URL or use a BitTorrent file.
Preferences	Click this to open a screen where you can set the default location for saving downloads and configure your BitTorrent settings.
Refresh	Click this to update the information displayed on the screen.
Delete	To delete download tasks (or manually clear out completed download tasks), select a download task and click this to remove it from the list. A pop-up screen asks you to confirm. Click **Apply** to delete or **Cancel** to quit. When you delete a download task, you are given the option to delete the associated files. Selecting this option deletes a downloaded file and in the case of a BitTorrent download task, also deletes the related .torrent file. Use your keyboard's [SHIFT] key to select a range of download tasks. Use the [CTRL] key and click individual download tasks to select multiple individual download tasks.

Table 28 Applications > Download Service (continued)

LABEL	DESCRIPTION
Pause	Select a downloading item and click this to temporarily stop the download. Paused downloads appear in the **Download Service** screen's **Inactive tab**. Use your keyboard's [SHIFT] key to select a range of download tasks. Use the [CTRL] key and click individual download tasks to select multiple individual download tasks.
Resume	Select a paused item and click this to continue downloading the file. Select a completed item and click this to re-seed a torrent file or download a file again. If you want to re-seed a BitTorrent task, keep the torrent file and the completed file in their original locations.
Task Info	Select an item on the list and click this to display information about the download task. See Section 7.4.8 on page 149 for more details.
	The table lists your downloads. Click a column's heading to sort the entries by that criteria.
Active	Click this to see the list of files the NSA is currently downloading or sharing with other BitTorrent users. The NSA handles a maximum of 10 active tasks at a time (or fewer depending on how much of the NSA's system memory is available). If you add more, they appear in the **Inactive** tab. Bit Torrent downloads may appear in the **Inactive** tab for a while before showing in the **Downloading** tab. The NSA automatically moves completed tasks to the **Completed** tab.
Inactive	Click this to see the list of files that are queued (waiting in line) for the NSA to download or the downloads that have been manually paused.
Completed	Click this to see the list of files that the NSA has finished downloading. The **Location** column shows where a downloaded file is saved on the NSA. Click on the location link to open the share browser and access the file.
Error	Click this to see the list of files that the NSA was not able to download. The NSA automatically retries unsuccessful download attempts. The download displays in the error tab when the re-attempts are also unsuccessful and the NSA stops trying to download the file. To try the download again, use the **Add** button to create a new download task.
Status	The icon shows the download's status. **Completed**: The NSA has downloaded the whole file. **Seeding**: The download is finished and the NSA is allowing other BitTorrent users to download it. **Downloading**: The NSA is getting the file. **Queued**: The download is waiting in line for the NSA to download it. **Pause**: The download has been manually stopped. Select it and click **Resume** to continue it. **Error**: The NSA was not able to complete the download. Select it and click **Resume** to reattempt the download.

Table 28 Applications > Download Service (continued)

LABEL	DESCRIPTION
Name	This identifies the download file. A "..." indicates an abbreviated name. Hold your cursor over the name to display the full name.
Complete (%)	This is the percentage of the file that the NSA has downloaded.
Location	This appears in the **Completed** tab. It displays the path for where the file is saved. Click on the location link to open the share browser and access the file.
Seeds	Seeds apply to BitTorrent downloads. This is the number of computers that are sharing the complete file that you are downloading.
Peers	Peers apply to BitTorrent downloads. This is the number of other computers that are also downloading (and sharing) the file you are downloading.
Download Speed	This is how fast the NSA is getting the file. It is normal for a BitTorrent download to start out with a slow download speed since it has to set up numerous connections. The speed should increase as the download progresses and decrease near the end of the download.
Upload Speed	This is how fast the NSA is sending the file to other BitTorrent users.
Time Left	This is how much longer (in hours, minutes, and seconds) it should take to finish the download at the current download speed.
Priority	This is the download's priority on the NSA. You can set a currently downloading or queued download to high or automatic priority. You can set a download to high priority to have the NSA try to download it before the other files. However the actual download speed depends more on factors like the speed of you Internet connection, the speed of the download source's Internet connection, how many others are trying to download at the same time, the peers and seeds available and general network conditions.

7.4.3 Adding a Download Task

Click **Applications > Download Service > Add** to open the following screen. Use this screen to specify a file for the NSA to download. Section 3.3 on page 59 provides a tutorial on adding a download task.

Figure 33 Applications > Download Service > Add

Add Download Task From URL
Source
URL
Torrent File
Browse...
Default Destination
Note:To change the default destination, you must go to the Preferences Dialog.
Shares admin
Path /download
Caution:
Do not use the NSA for illegal downloads. Illegal downloading or sharing of files can result in severe civil and criminal penalties. You are subject to the restrictions of copyright laws and any other applicable laws and will bear the consequences of any infringements thereof. ZyXEL takes NO responsibility or liability for your use of the download service feature.
Apply
Cancel

The following table describes the labels in this screen.

Table 29 Applications > Download Service > Add

LABEL	DESCRIPTION
URL	Paste the URL of the file you want to download into this field. The URL can be for an HTTP, FTP, or BitTorrent download. For a BitTorrent download, you can copy and paste the URL of the .torrent file. The NSA will automatically download the .torrent file and use it. You do not have to manually download the .torrent file or save it to your computer. Note: Make sure the link opens either the file you want or a pop-up window about how to handle the file. It is also OK for the link to open a .torrent file. If you are redirected to a screen that says the download should start in a few seconds, there may be a link to click if the download does not start automatically. See if that link opens the file or the pop-up window.
Torrent File	A "torrent" file has information the NSA uses to do a BitTorrent download. A torrent file uses a .torrent extension. If you already have a torrent file saved on your computer, select the **Torrent File** option and specify its path or click **Browse** and look for its location.
Default Destination	This shows where the NSA stores files after downloading them.
Volume	This is the volume where the NSA saves downloaded files.
Path	This is the location of the share where the NSA will save the downloaded files. Click **Edit** to go to a screen where you can set the default location for saving downloads and configure your BitTorrent settings.

Table 29 Applications > Download Service > Add

LABEL	DESCRIPTION
Apply	Click this to save your changes.
Cancel	Click this to return to the previous screen without saving.

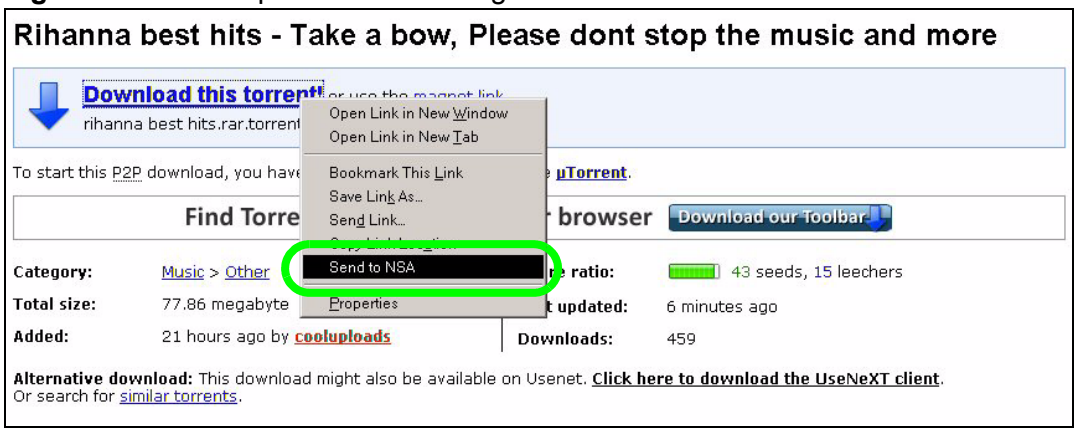
7.4.4 Link Capture Browser Plugin

The link capture browser plugin is an add-on feature for your web browser. Use the plugin to directly add a file's URL to the NSA's download service.

Note: The link capture browser plugin is located in the included CD.

The following screen displays how the plugin works.

Figure 34 Link Capture Browser Plugin



Instead of copying and pasting a file's URL to the NSA's download service, you can right-click on the URL in the web browser and select **Send to NSA**. The URL is then added to the NSA's download service list.

See Section 3.3.2 on page 62 and Section 3.3.3 on page 67 for tutorials about installing and using the link capture browser plugin.

Note: At the time of writing, the plugin supports Internet Explorer 6.0/7.0 and Mozilla Firefox 2.0/3.0.

7.4.5 Download Service Notification

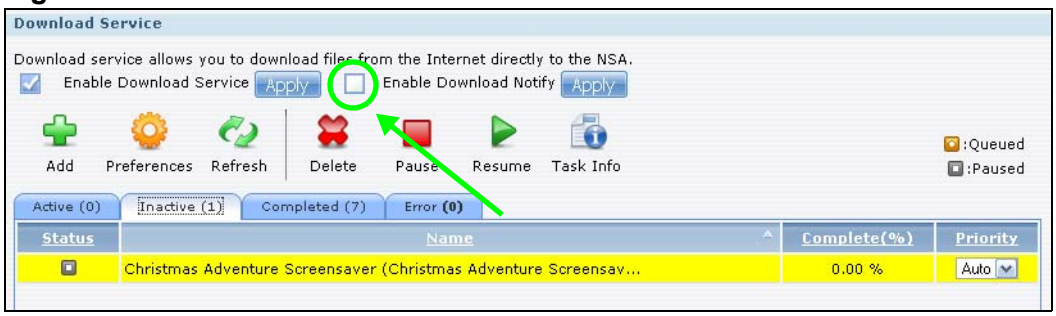
Use the download service notification to keep track of downloaded files on the NSA. You can subscribe the NSA's download list to an RSS reader on your computer. When the NSA finishes downloading new files, your RSS reader displays the information and links for the files. You can download the files from the RSS reader to your computer.

See Section 3.3.5 on page 71 for a tutorial about using the download service notification.

In the **Download Service** screen, select **Enable Download Notify** and click **Apply**. An RSS feed icon appears. Click the icon to subscribes the NSA's download list to an RSS reader.

Note: The download service notification only keeps track of files downloaded via BitTorrent.

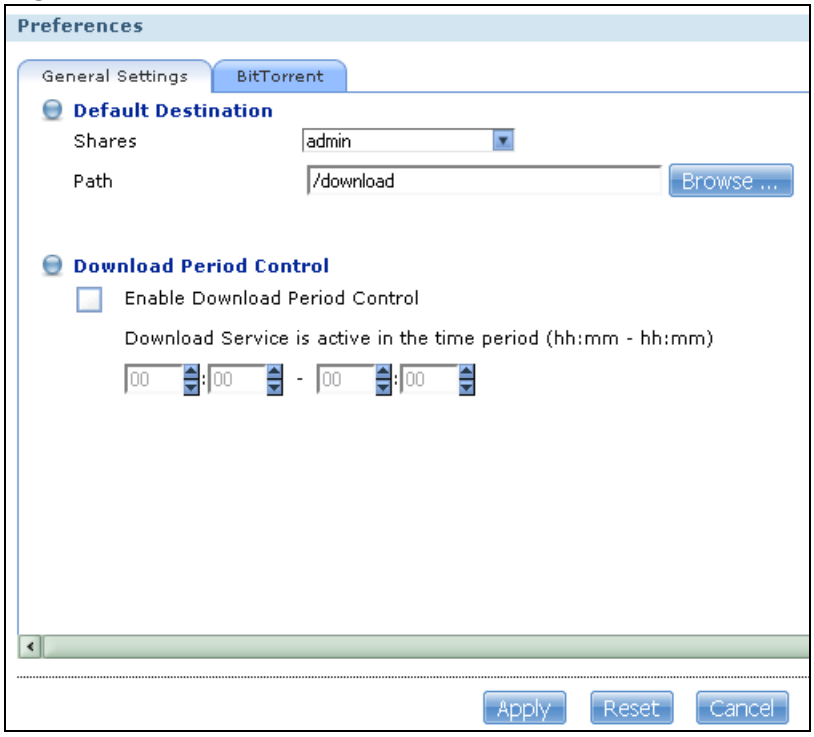
Figure 35 Download Service Notification



7.4.6 Configuring Download Service General Settings

Click **Applications > Download Service > Preferences** to open the following screen. Use this screen to set the default location for saving downloads and configure the download period.

Figure 36 Applications > Download Service > Preferences > General Settings



The following table describes the labels in this screen.

Table 30 Applications > Download Service > Preferences > General Settings

LABEL	DESCRIPTION
Default Destination	Use these fields to select where on the NSA to store the files the NSA downloads. Files downloaded via HTTP/FTP are saved in the destination share or folder. Files downloaded via BitTorrent are saved in the **incoming** folder within the destination share or folder.
Shares	If you have more than one volume, select the one that contains the share where you want to save downloaded files.
Path	Type the location of the share to save downloaded files in or click **Browse** and navigate to the file's location.
Download Period Control	This feature sets the NSA to download files only within a specified time period.
Enable Download Period Control	Use the check box to turn the download period control on or off.

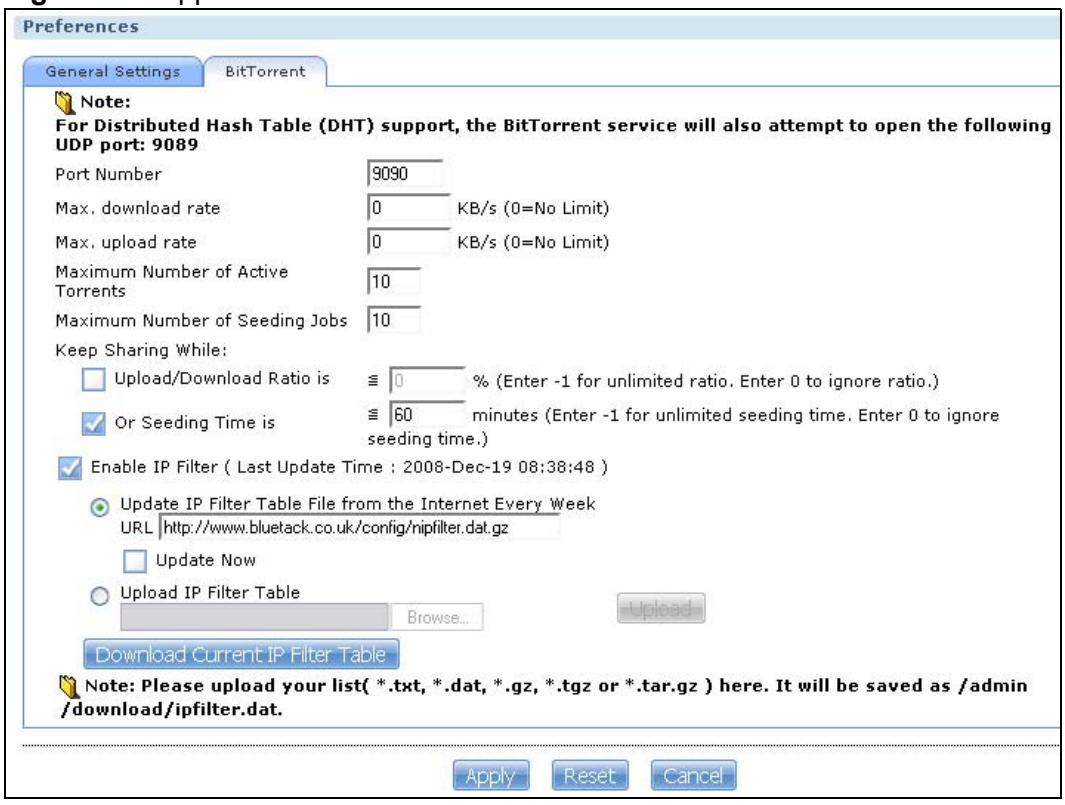
Table 30 Applications > Download Service > Preferences > General Settings

LABEL	DESCRIPTION
Download Service is active in the time period (hh:mm - hh:mm)	Specify the time period for the NSA to download files. Note: If you also configured the **Power On/Off Schedule** feature in the **Power Management** screen, make sure your active download period does not conflict with the power-off period.
Apply	Click this to save your changes.
Reset	Click this to restore your previously saved settings.
Cancel	Click this to return to the previous screen without saving.

7.4.7 Configuring the BitTorrent Settings

Click **Applications** > **Download Service** > **Preferences** > **BitTorrent** to open the following screen. Use this screen to configure BitTorrent settings.

Figure 37 Applications > Download Service > Preferences > BitTorrent


Preferences
General Settings
BitTorrent
Note:
For Distributed Hash Table (DHT) support, the BitTorrent service will also attempt to open the following UDP port: 9089
Port Number
9090
Max. download rate
0
KB/s (0=No Limit)
Max. upload rate
0
KB/s (0=No Limit)
Maximum Number of Active Torrents
10
Maximum Number of Seeding Jobs
10
Keep Sharing While:
Upload/Download Ratio is
0
% (Enter -1 for unlimited ratio. Enter 0 to ignore ratio.)
Or Seeding Time is
60
minutes (Enter -1 for unlimited seeding time. Enter 0 to ignore seeding time.)
Enable IP Filter (Last Update Time : 2008-Dec-19 08:38:48)
Update IP Filter Table File from the Internet Every Week
URL
http://www.bluetack.co.uk/config/nipfilter.dat.gz
Update Now
Upload IP Filter Table
Browse...
Upload
Download Current IP Filter Table
Note: Please upload your list(*.txt, *.dat, *.gz, *.tgz or *.tar.gz) here. It will be saved as /admin/download/ipfilter.dat.
Apply
Reset
Cancel

The following table describes the labels in this screen.

Table 31 Applications > Download Service > Preferences > BitTorrent

LABEL	DESCRIPTION
Port Number	Assign a port number for BitTorrent downloads. You can select a number from 2 to 65536. It is recommended to use a port number greater than 1025.
Max. download rate	You may need to limit the bandwidth the NSA uses for BitTorrent downloads if your network's other Internet applications are not getting enough downstream bandwidth. 0 has the NSA impose no restriction.
Max. upload rate	You may need to limit the bandwidth the NSA uses to share files through BitTorrent if your network's other Internet applications are not getting enough upstream bandwidth. 0 has the NSA impose no restriction. If you do not allow any uploads, (for example, you set a limit of 1 KB/s) you will not have a good standing in the BitTorrent community. Note: The settings for maximum download/upload rates would not affect peers accessing the NSA from the same LAN.
Maximum Number of Active Torrents	Specify how many simultaneous BitTorrent downloads are allowed on the NSA. You can enter a number from 1 to 10.
Maximum Number of Seeding Jobs	Specify how many simultaneous seeds are allowed on the NSA. Enter a number from 1 to 10. This value cannot exceed the one you configured in the **Maximum Number of Active Torrents** field.
Keep Sharing While	With BitTorrent, the NSA starts sharing a file while you are downloading it. Set how long to continue sharing a file after the NSA finishes the download. Select **Upload/Download Ratio** to keep sharing a file until the NSA has uploaded a specific percent compared to the download. Select **Seeding Time** to keep sharing a file for a specific number of minutes after the download finishes. Continuing to share a file helps other BitTorrent users finish downloading it. Sharing out at least as much as you download helps keep you in good standing in the BitTorrent community. Enter -1 to share a file indefinitely. Leave both check boxes blank to have the NSA stop sharing the file as soon as the download finishes. If you select both options, the NSA keeps sharing a file until both conditions exceed the values you configure. For example, you entered 150% in the **Upload/Download Ratio** field and 120 minutes in the **Seeding Time** field. The NSA keeps sharing a file until it has shared 1.5 times the size of the file and has passed 120 minutes.

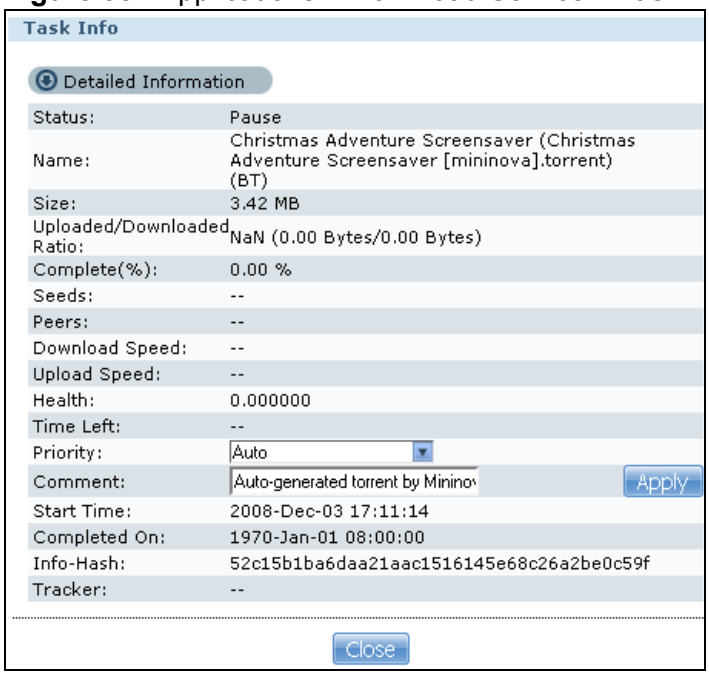
Table 31 Applications > Download Service > Preferences > BitTorrent

LABEL	DESCRIPTION
Enable IP Filter	Use the check box to enable or disable IP filtering for BitTorrent downloads. IP filtering blocks IP addresses known to share fake files. You can either get an IP filter table from a website or use your own table.
Update IP Filter Table File from the Internet Every Week	Select this option and enter a URL to use an online IP filter table. You can find an online IP filter table in websites such as http://www.bluetack.co.uk/config/level1.gz.
Update Now	Select the check box and click **Apply** to update the IP filter table from the specified URL. When you change the URL of the online IP filter table, the NSA also performs an update after you click **Apply**.
Upload IP Filter Table	Select this option to upload your own IP filter table. Use the **Browse** button to locate the file and click **Upload** to save it on the NSA. The NSA supports .txt, .dat, .gz, .tgz, and .tar.gz file extentions. The NSA saves the IP filter table as **/admin/download/ipfilter.dat**.
Download Current IP Filter Table	Click this to save a copy of the IP filter table on your computer.
Apply	Click this to save your changes.
Reset	Click this to restore your previously saved settings.
Cancel	Click this to return to the previous screen without saving.

7.4.8 Displaying the Download Task Information

Select an item on the list and click **Task Info**. Use this screen to check detailed information about the download task.

Figure 38 Applications > Download Service > Task Info



The following table describes the labels in this screen.

Table 32 Applications > Download Service > Task Info

LABEL	DESCRIPTION
Status	This is the current status of the download task.
Name	This is the name of the download task.
Size	This is the size of the file to be downloaded.
Uploaded/ Downloaded Ratio	This is the ratio of total uploaded data to downloaded data.
Complete(%)	This field displays how much has been downloaded to the NSA.
Seeds	This field displays how many seeds are being shared for this download task.
Peers	This field displays how many peers are sharing the file.
Download Speed	This field displays how fast the NSA downloads the file.
Upload Speed	This field displays fow fast the NSA uploads the file.
Health	This field displays how many full copies of the file are available for this download task. The NSA can download a file with a higher health value more efficiently. If the health value is less than 1 (0.65 for example), there is no full copy of the file, and the NSA may not be able to complete downloading the file.
Time Left	This is the time remaining to complete the download task.

Table 32 Applications > Download Service > Task Info

LABEL	DESCRIPTION
Priority	Use this field to set the priority for downloading the task. Select **Auto** to have the NSA automatically determine the download task's priority. Select **High** to have the NSA download this file before the other files.
Comment	Enter a description for this download task.
Start Time	This field displays when the NSA started to download files.
Completed on	This field displays when the file was successfully downloaded to the NSA.
Info-Hash	This information is used to verify the torrent file.
Tracker	This field displays the tracker that NSA is currently connected to. A tracker is a server used for finding peers sharing the file.
Close	Click this to close the screen.

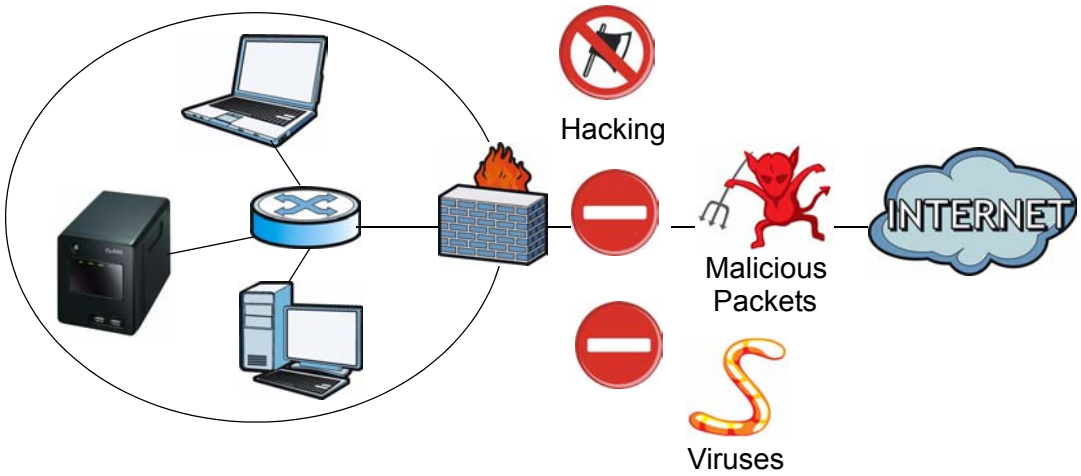
7.4.9 BitTorrent Security

When you download using BitTorrent, you reveal your IP address. This increases the risk of hacking attacks, which can be protected against by a good firewall.

Use a Hardware-based Firewall

Place a hardware-based firewall between your network and the Internet (a software-based firewall on your computer would just protect the computer itself, not the NSA since your computer is not between your NSA and the Internet). Ideally your firewall should have all of the following.

Figure 39 Firewall



- Stateful packet inspection to control access between the Internet and your network and protect your NSA (and computers) from hacking attacks.

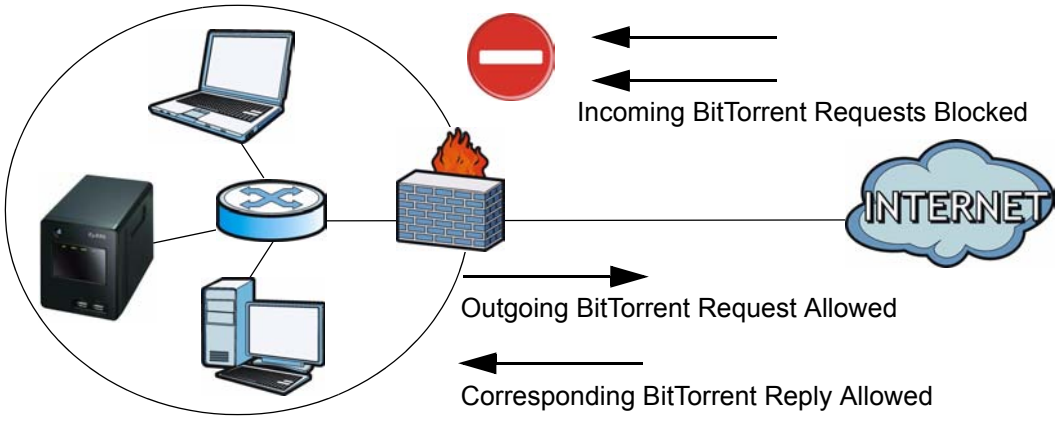
- IDP (Intrusion Detection and Prevention) to detect malicious packets within normal network traffic and take immediate action against them.
- Anti-virus to check files you download for computer viruses.

BitTorrent and Your Firewall

The anti-virus feature on a firewall probably cannot check BitTorrent downloads for viruses, so use anti-virus software on your computer to scan the NSA for viruses.

When you download using BitTorrent, many other BitTorrent users are also trying to download the file from you. The firewall slows this down because by default, it only allows traffic from the Internet in response to a request that originated on the LAN (it lets you get files from the Internet and blocks those on the Internet from getting files from you).

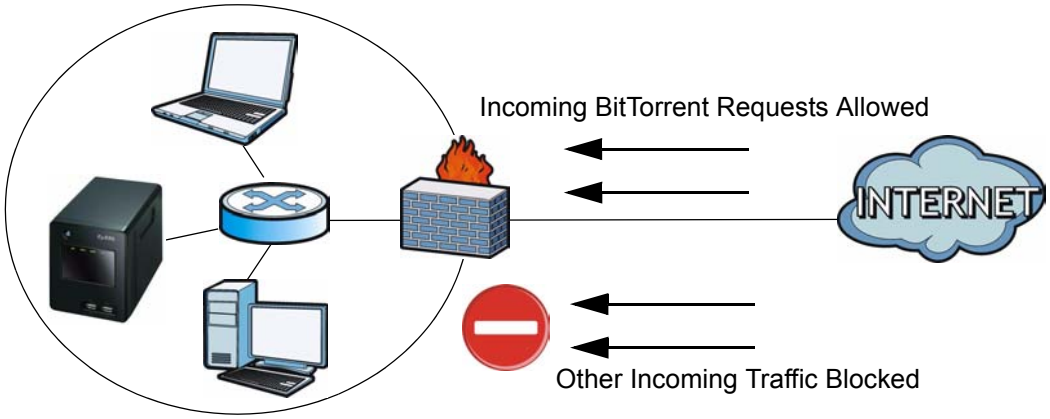
Figure 40 Firewall Blocking Incoming BitTorrent Requests



To speed up BitTorrent file transfers, configure your firewall's port forwarding to send incoming TCP port 6881 and UDP port 6880 connections to the NSA. You probably need to use your firewall's HTML (web-based) configuration interface to

set this up (see the firewall's manual for details). You may also have to configure a corresponding firewall rule.

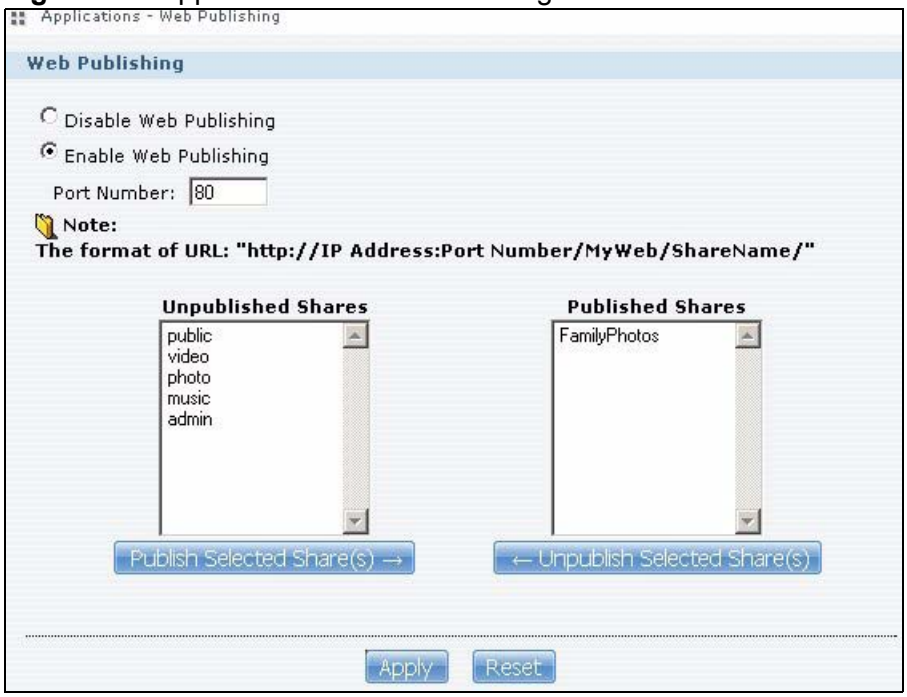
Figure 41 Firewall Configured to Allow Incoming BitTorrent Requests



7.5 The Web Publishing Screen

Click **Applications > Web Publishing** to open the following screen. Use this screen to turn web publishing on or off and select shares to publish.

Figure 42 Applications > Web Publishing



The following table describes the labels in this screen.

Table 33 Applications > Web Publishing

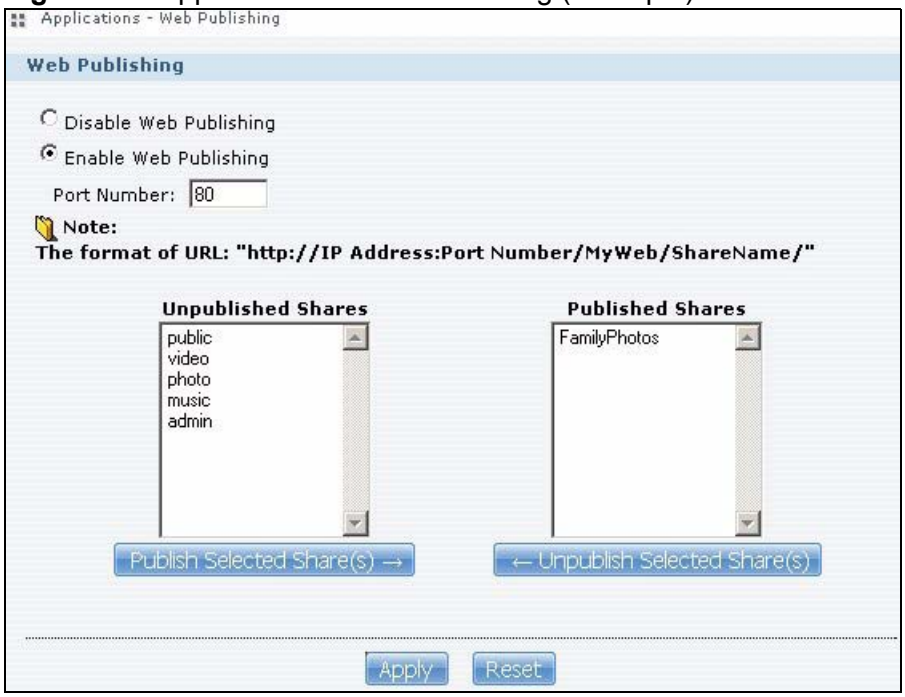
LABEL	DESCRIPTION
Disable / Enable Web Publishing	Turn on web publishing to let people access files in the published shares using a web browser, without having to log into the My NSA screens.
Port Number	Specify a port number for accessing the published share websites hosted on the NSA. If you enter a number other than 80, make sure you include it when telling others how to access the web-published share. For example, say you specified port 8080, the NSA's IP address is 192.168.1.23, and the name of the web-published share is FamilyPhotos. You would have to enter "http://192.168.1.23:8080/MyWeb/FamilyPhotos/" in your browser's address bar to access the share's web page.
Unpublished Shares	This list box displays the shares that the NSA does not publish for web browser access.
Publish Selected Share(s)	Select shares in the **Unpublished Shares** box and click this to let people access files in the published shares using a web browser, without logging into the My NSA screens. Use the [SHIFT] key to select a range of entries. Hold down the [CTRL] key to select multiple individual entries.
Published Shares	This list box displays the shares people can access using a web browser, without logging into the My NSA screens.
Unpublish Selected Share(s)	Select shares in the **Published Shares** box and click this to not let people access using a web browser without logging into the My NSA screens. Use the [SHIFT] key to select a range of entries. Hold down the [CTRL] key to select multiple individual entries.
Apply	Click this to save your changes.
Reset	Click this to restore your previously saved settings.

7.5.1 Web Publishing Example

This example covers how to configure the **Web Publishing** screen to let people use a web browser to access a share named FamilyPhotos without logging into the **My NSA** screens and shows how to access the share through the Internet.

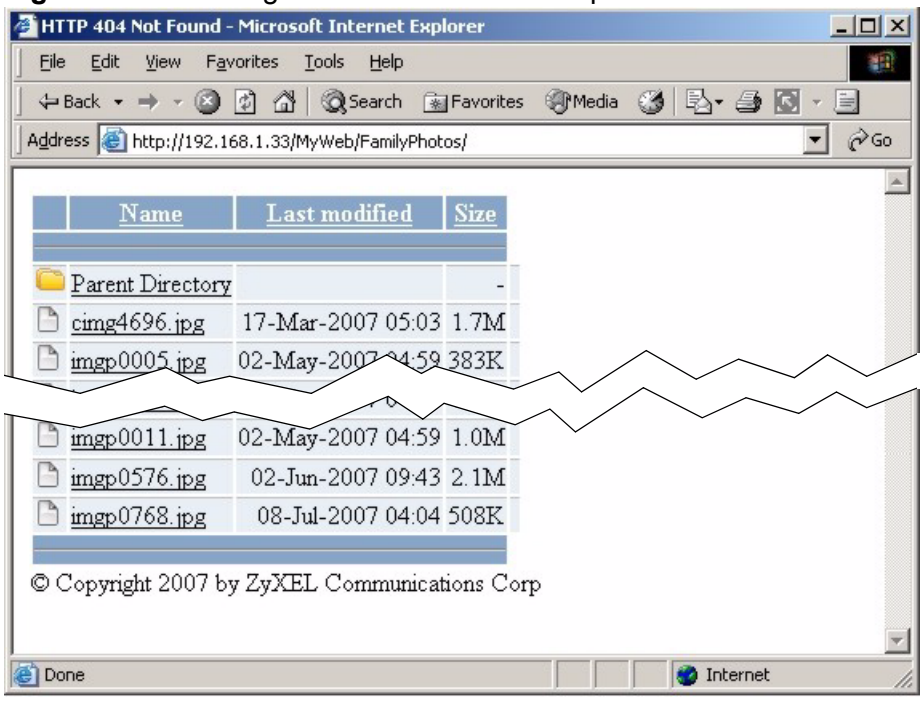
1 Click **Applications > Web Publishing** and configure the screen as shown (enable the web publishing and move **FamilyPhotos** over to **Published Shares**) and click **Apply.**

Figure 43 Applications > Web Publishing (Example)



2 Now open your web browser and type in the address of the NSA's FamilyPhotos web page. In this example, the NSA's IP address is 192.168.1.33, and the name of the web-published share is FamilyPhotos. So you would enter "http://192.168.1.33/MyWeb/FamilyPhotos/" in your browser's address bar. Then press [ENTER] or click **Go**. A screen displays listing the share's files.

Figure 44 Browsing to an NSA Share Example



- Click a file's link to open the file.
- Right-click a file's link and select **Save Target As..** (in Internet Explorer) to save a copy of the file.
- Click a label in the heading row to sort the files by that criteria.
- To customize how the page looks and works, create an index.html or index.htm file and store it in the share.

7.5.2 Web Publishing

Web publishing lets you "publish" shares (containing folders and files) on the NSA so people can access the files using a web browser without having to log into the My NSA screens. This way you can share files with others without them having to know and enter a user name and password.

For example, if you want to share photos in a FamilyPhotos share, you could "web publish" it and others could use a web browser to access the photos at http://my-NSA's-IP-Address/MyWeb/FamilyPhotos.

Note: The NSA does not use any security for the files in the published folders. It is not recommended to publish shares if you do not have the NSA behind a good hardware-based firewall. See page 150 for more on firewalls.

Additionally, you can use HTML editing software (not included) to create an index.html or index.htm file to define and customize how your website works and looks.

Accessing Web-published Shares from the Internet

You need to use a public address to access the NSA's web-published shares from the Internet. If your NSA uses a private IP address, you may need to use the public IP address of your Internet gateway and configure NAT or port forwarding on your Internet gateway and possibly firewall rules in order to let people access the NSA's web-published shares from the Internet.

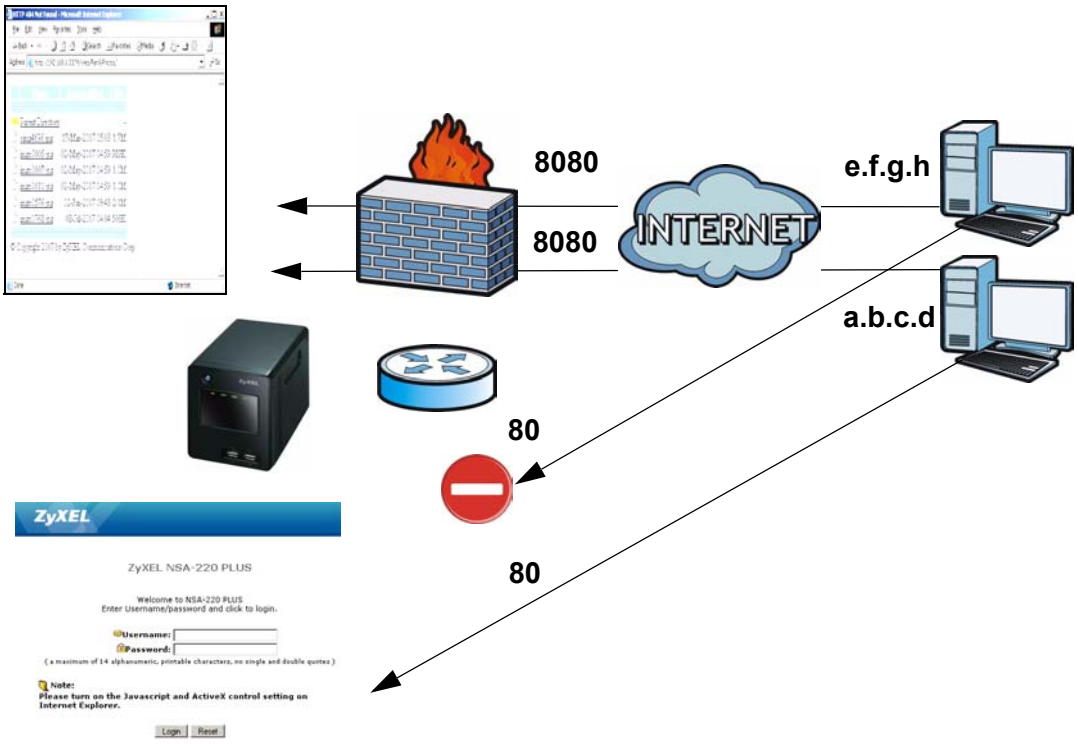
Web Publishing Port Number

If the web-published shares use a port number other than 80 (the normal port for web traffic), users must include it after the NSA's IP address in order to access the NSA's web-published shares. For example, say you specified port 8080, the NSA's IP address is 192.168.1.23, and the name of the web-published share is FamilyPhotos. You would have to enter "http://192.168.1.23:8080/MyWeb/FamilyPhotos/" in your browser's address bar to access the share's web page.

The NSA's web configurator uses port 80. To make the web configurator more secure, you can have the web-published shares use another port number. Then you can configure one set of firewall rules and NAT or port forwarding settings on your Internet gateway specifically for allowing access to the web-published shares and another separate set of rules for accessing the NSA's web configurator.

In the following example, the Internet gateway's firewall is configured to allow anyone to access the NSA's web-published screens using port 8080. Web configurator access (port 80) however, is only allowed from IP address a.b.c.d.

Figure 45 Web Publishing Port Number Example

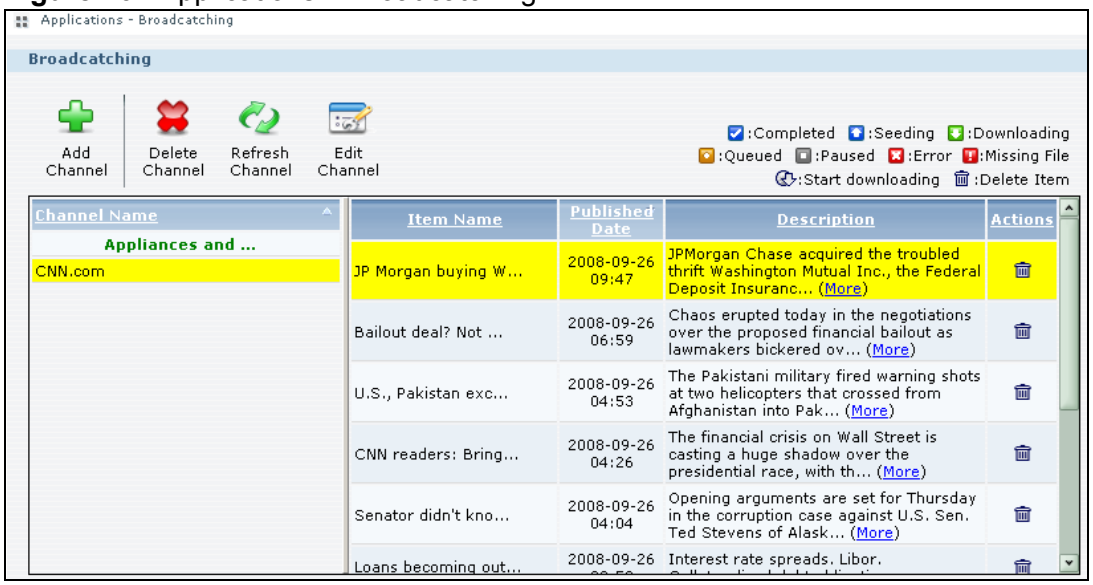


7.6 The Broadcatching Screen

Click **Applications > Broadcatching** to open the following screen. This screen displays the NSA's subscribed channels and the associated contents.

- The NSA saves a channel's downloaded items in a folder named after the channel.
- The NSA creates the channel folders in the same destination as the download service. See Section 7.4.6 on page 145 to change the destination for saving downloads.
- The NSA's media server feature makes it easy for users on your network to play the broadcatching files you download. See Section 7.3.1 on page 135 for more on the media server.

Figure 46 Applications > Broadcatching


Applications - Broadcatching
Broadcatching
Add Channel
Delete Channel
Refresh Channel
Edit Channel
:Completed :Seeding :Downloading
:Queued :Paused :Error :Missing File
:Start downloading :Delete Item
Channel Name
Appliances and ...
CNN.com
Item Name
Published Date
Description
Actions
JP Morgan buying W...
2008-09-26 09:47
JPMorgan Chase acquired the troubled thrift Washington Mutual Inc., the Federal Deposit Insuranc... (More)
Bailout deal? Not ...
2008-09-26 06:59
Chaos erupted today in the negotiations over the proposed financial bailout as lawmakers bickered ov... (More)
U.S., Pakistan exc...
2008-09-26 04:53
The Pakistani military fired warning shots at two helicopters that crossed from Afghanistan into Pak... (More)
CNN readers: Bring...
2008-09-26 04:26
The financial crisis on Wall Street is casting a huge shadow over the presidential race, with th... (More)
Senator didn't kno...
2008-09-26 04:04
Opening arguments are set for Thursday in the corruption case against U.S. Sen. Ted Stevens of Alask... (More)
Loans becoming out...
2008-09-26
Interest rate spreads. Libor.

The following table describes the labels in this screen.

Table 34 Applications > Broadcatching

LABEL	DESCRIPTION
Add Channel	When you find a channel to subscribe to, copy the URL of the channel's feed and click this button. A screen opens for you to subscribe to the feed. When you are done, the feed's channel and contents display in the **Applications > Broadcatching** screen.
Delete Channel	Select a channel and click **Delete Channel** to remove the channel from the NSA. Any of the channel's items that you have already downloaded stay in the channel's folder (in the **admin** share's **download** folder).
Refresh Channel	Select a channel and click **Refresh Channel** to check for new files.
Edit Channel	Select a channel and click **Edit Channel** to open a screen where you can set the channel's download and delete policies.

Table 34 Applications > Broadcatching

LABEL	DESCRIPTION
	The table lists channels and their files. Click a column's heading to sort the entries by that criteria.
Channel Name	This identifies the channel. A channel displays in red if there was an error the last time the NSA attempted to connect to it. When this happens, you can select the channel and click **Refresh Channel** to have the NSA reattempt to connect to it. Select a channel to see its available files. A "..." indicates an abbreviated name. Hold your cursor over the name to display the full name.
Item Name	These are the downloadable files. The icon shows the file's status in the NSA. A ... indicates an abbreviated name. Hold your cursor over the name to display the full name. **Completed**: The NSA has downloaded the whole file. Double-click the item to go to the **Download Service** screen where you can see the file's name and location. **Seeding**: The NSA downloaded the complete file and NSA is sharing it with other BitTorrent users. Double-click the item to go to the **Download Service** screen. **Downloading**: The NSA is downloading the file. Double-click the item to go to the **Download Service** screen. **Queued**: The file is waiting in line for the NSA to download it. Double-click the item to go to the **Download Service** screen. **Pause**: The download has been manually stopped. Double-click the item to go to the **Download Service** screen. **Missing File**: The NSA could not find the file. **Error**: The NSA automatically retries unsuccessful download attempts. The status displays as error when the re-attempts are also unsuccessful and the NSA stops trying to download the file. To try the download again, use the **Add** button to create a new download task.
Published Date	This is when the file was made available for download.
Description	This is the publishers introduction for the file.
Actions	**Start Downloading**: Click this to add the file to the NSA's download queue or check the file's status in the NSA's download service. Click the **Delete** icon to remove the file from the channel's list.

7.6.1 Adding or Editing a Broadcatching Channel

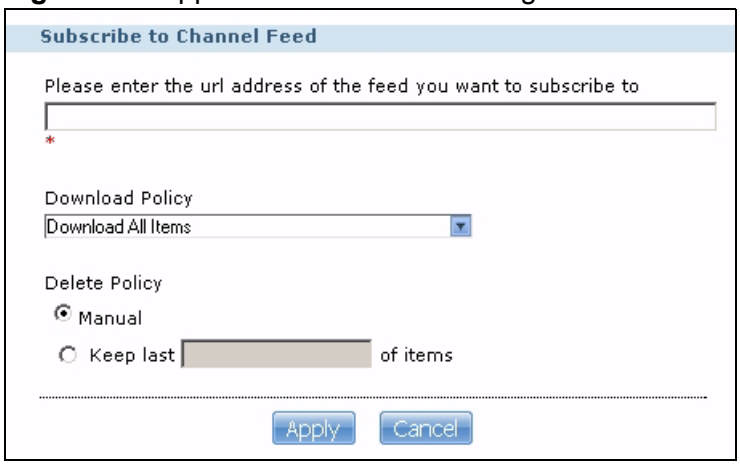
At the time of writing, the NSA supports RSS 2.0 feeds. Websites with a feed usually display a feed icon (shown next). Copy and paste the feed's URL into the **Applications > Broadcatching > Add Channel** screen and you can download new files as they are added.

Figure 47 Feed Icon

A channel uses a feed to deliver its contents (items). Subscribe the NSA to a feed to be able to download the contents.

Click **Applications > Broadcatching > Add Channel** to open the following screen. Use the **Add Channel** screen to subscribe the NSA to a channel's feed so you can view the channel. You also select policies for downloading and deleting the channel's items. Section 3.4 on page 75 provides a tutorial on adding a broadcatching channel. Click **Applications > Broadcatching**, then select a channel and click **Edit Channel** to open a similar **Edit** screen. Use the **Edit Channel** screen to change the download or delete policies.

Figure 48 Applications > Broadcatching > Add Channel



The following table describes the labels in this screen.

Table 35 Applications > Broadcatching > Add Channel

LABEL	DESCRIPTION
Subscribe to Channel Feed	Paste (or type) the URL of the feed for the channel to which you want to subscribe into this field. This is read-only in the **Preferences** screen. Note: Make sure the link goes to the actual RSS feed instead of to another list of links or information about the channel. One way to test this is by clicking the link. Clicking an actual RSS feed link opens a screen of XML code (in browsers without an RSS feed aggregator) or a window where you can add the RSS feed (in browsers with an RSS feed aggregator).
Download Policy	Set which of the channel's items the NSA downloads. **Download All Items**: Download every file in the feed. **Download Only New Items**: Download new files from today on. **Manually Choose Items for Download**: Only download individual files you select later in the **Applications > Broadcatching** screen.
Delete Policy	Set how the NSA handles deleting the items downloaded from the channel. **Manual**: Only delete individual files you select later in the **Applications > Broadcatching** screen. **Keep last N of items**: Select this to set the NSA to only keep a number of the channel's most recent files. When this number has been reached, if the NSA downloads another file from the channel, it deletes the oldest file from the NSA.
Apply	Click this to save your changes.
Cancel	Click this to return to the previous screen without saving.

7.6.2 Channel Guides

Here are some popular broadcatching channel guide web sites.

Note: ZyXEL does not endorse these web sites and is not responsible for any of their contents. Use these or any other web sites at your own risk and discretion.

http://www.zencast.com/

http://www.miroguide.com/

http://www.vuze.com/

http://www.mefeedia.com/

http://www.vodstock.com/

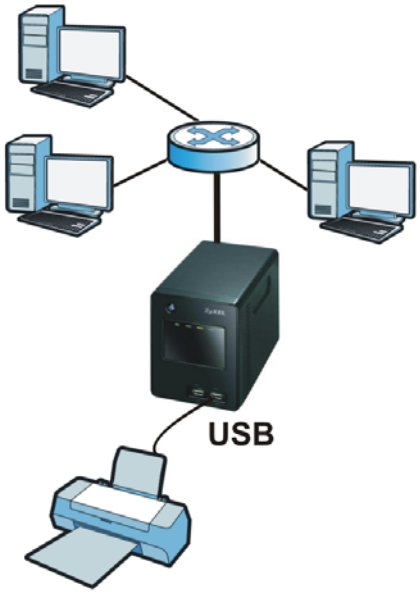
7.7 The Print Server Screen

Use the **Print Server** screen to view and manage the NSA's list of printers and print jobs.

7.7.1 Printer Sharing

The NSA can act as a print server. A print server lets multiple computers share a printer. Connect a printer to the NSA's USB port to let multiple computers on your network use it. See www.zyxel.com for a list of compatible printers.

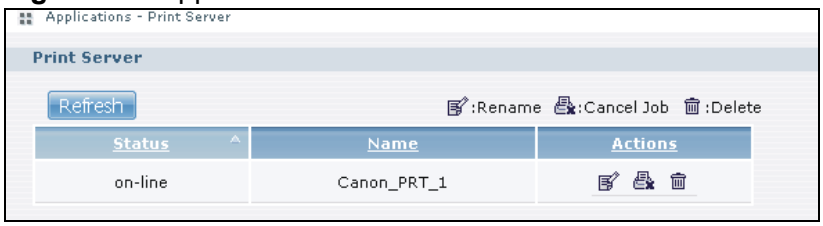
Figure 49 Printer Sharing



7.7.2 Configuring the Print Server Screen

Click **Applications > Print Server** to open the following screen.

Figure 50 Applications > Print Server



The following table describes the labels in this screen.

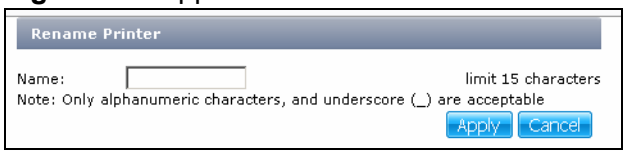
Table 36 Applications > Print Server

LABEL	DESCRIPTION
Refresh	Click this to update the list of printers and print jobs.
	The table lists printers and their queued print jobs. Click a column's heading to sort the entries by that criteria.
Status	This fields shows whether the printer is connected and turned on (**on-line**) or not (**off-line**).
Name	This identifies the printer. Each printer connected to the NSA must use a unique name.
Actions	**Rename**: Click this to change the name the NSA uses for the printer. **Cancel Job**: Click this to remove all print jobs from the NSA queue for a particular printer. However, since the NSA sends print jobs to the printer as soon as it can, this button may only have an effect if there are very large or many print jobs in the queue. To stop a print job that has already started, you may have to turn off the printer. **Delete**: Click this to remove a printer from the NSA's printer list. To add the printer back into the list, disconnect the printer from the NSA's USB port and reconnect it. If that does not work, disconnect the USB port and turn off the printer's power. Then reconnect the printer and turn it back on.

7.7.3 Print Server Rename

Click **Applications > Print Server** and a printer's **Rename** icon to open the following screen. Use this screen to change the name the NSA uses for the printer.

Figure 51 Applications > Print Server > Rename



The following table describes the labels in this screen.

Table 37 Applications > Print Server > Rename

LABEL	DESCRIPTION
Name	Type a new name to identify the printer. The name must be unique from all the other names of printers connected to the NSA.
Apply	Click this to save your changes.
Cancel	Click this to return to the previous screen without saving.

7.8 The Copy/Sync Button Screen

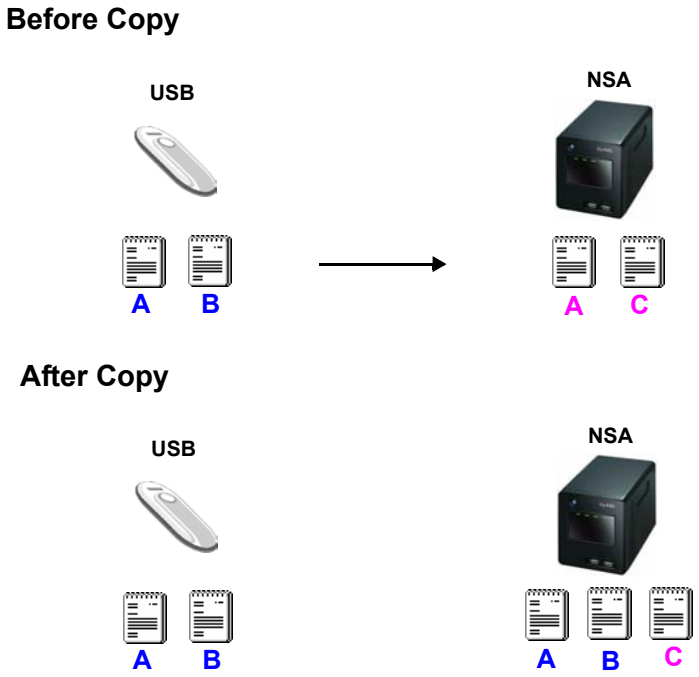
The **COPY/SYNC** button on the front panel allows you to copy or synchronize files between a connected USB device and the NSA.

7.8.1 Copying Files

You can copy files from a USB device to the NSA or from the NSA to a USB device. Simply press and release the **COPY/SYNC** button to start copying files. See Section 7.8.3 on page 167 for details about configuring the copy settings.

The following figure illustrates how copying files works when you copy files from a USB device to the NSA. The same concept applies when you copy files from the NSA to a USB device.

Figure 52 Copying Files Example



Both storage devices contain file A.

- A copy of files A and B from the USB device is transferred to the NSA.
- File A from the USB device replaces file A on the NSA.

7.8.2 Synchronizing Files

Synchronization makes the contents on the target device identical to the ones on the source device. You can synchronize files from a USB device to the NSA or from the NSA to a USB device. In addition, you may also synchronize files in both directions simultaneously.

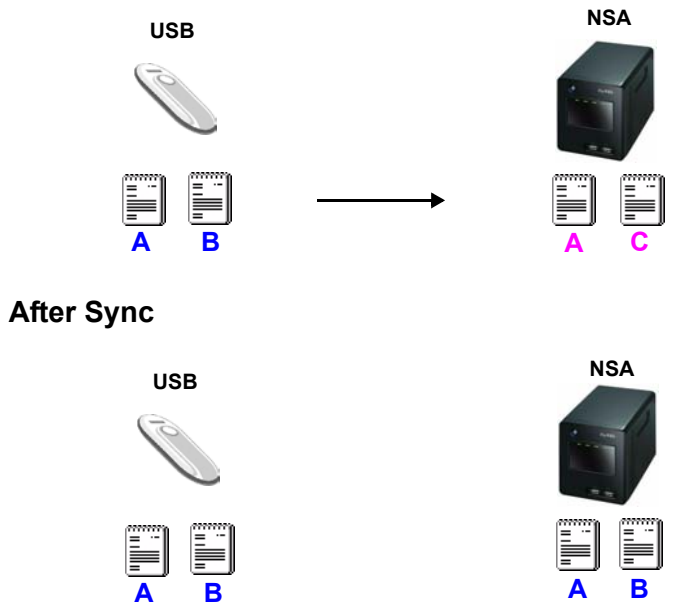
Press and hold the **COPY/SYNC** button until you hear a beep to synchronize files. See Section 7.8.3 on page 167 for details about configuring the synchronization settings.

USB -> NSA or USB <- NSA

When you synchronize files in one direction, contents on the source device replace the files on the target device.

The following figure illustrates how synchronization works when you synchronize files from a USB device to the NSA. The same concept applies when you synchronize files from the NSA to a USB device.

Figure 53 Synchronizing Files Example 1



Both storage devices contain A.

- A copy of files A and B from the USB device is transferred to the NSA.
- File A from the USB device replaces file A on the NSA.
- File C on the NSA is deleted.

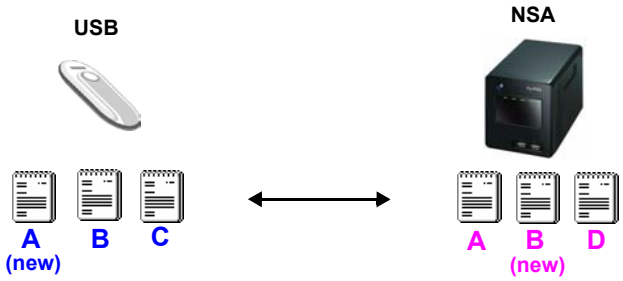
USB <-> NSA

When you synchronize files in both directions simultaneously, both storage devices transfer unique files to one another. Files with the same file name are synchronized according to their modification date/time. The difference in modification time between the two files has to be greater than five minutes. More recently modified files overwrite the older ones during synchronization.

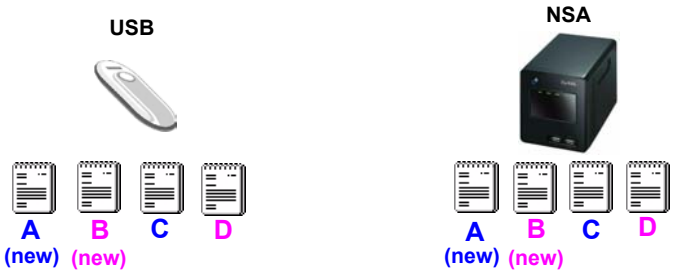
The following figure illustrates how synchronization works when you synchronize files in both directions simultaneously.

Figure 54 Synchronizing Files Example 2

Before Sync



After Sync



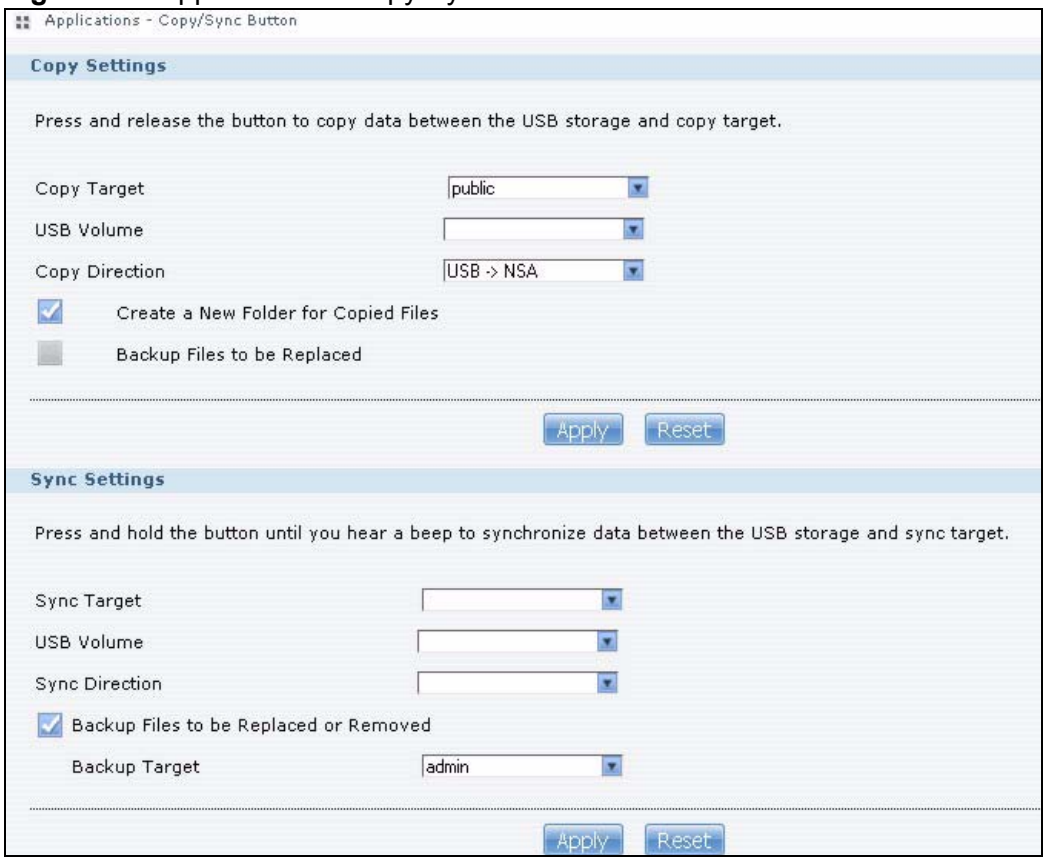
A on the USB device and B on the NSA are modified more recently.

- File A from the USB device replaces file A on the NSA.
- File B from the NSA replaces file B on the USB device.
- A copy of file C from the USB device is transferred to the NSA.
- A copy of file D from the NSA is transferred to the USB device.

7.8.3 Configuring the Copy/Sync Button Screen

Click **Applications** > **Copy/Sync Button** to open the following screen.

Figure 55 Applications > Copy/Sync Button



The following table describes the labels in this screen.

Table 38 Applications > Copy/Sync Button

LABEL	DESCRIPTION
Copy Settings	
Copy Target	Select the NSA share to use with the copy function.
USB Volume	If your USB device has multiple partitions, select which partition to use with the copy function.
Copy Direction	Select **USB -> NSA** to copy files from your USB device to the NSA. Select **NSA -> USB** to copy files from the NSA to your USB device.
Create a New Folder for Copied Files	Select this option to place the copied files in a new folder. The name of the folder created for the copied files consists of the date and time of the copy in year_month_day_hour_minute_second format.
Backup Files to be Replaced	This option is only available if you do not select **Create a New Folder for Copied Files**. Select this option to save the files that will be replaced by the source files.

Table 38 Applications > Copy/Sync Button

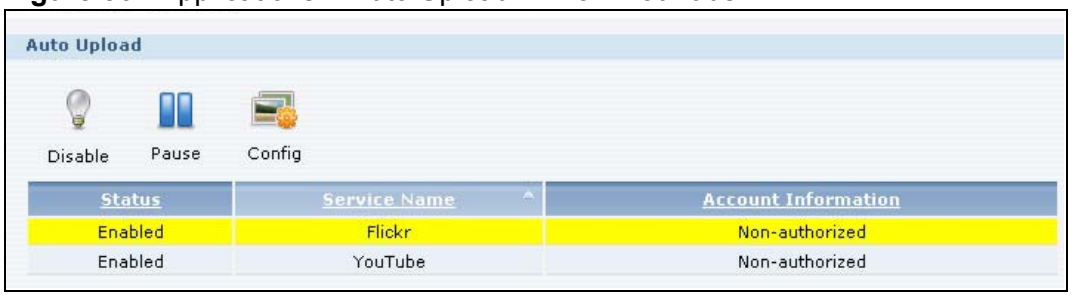
LABEL	DESCRIPTION
Backup Target	Select a share in which to save the backup files. Note: The NSA will not create a new folder to store the backup files. It is recommended to create a specific share (such as “backup”) for backup purposes.
Apply	Click this to save your changes. The configuration file is saved on the USB device.
Reset	Click this to restore your previously saved settings.
Sync Settings	
Sync Target	Select the NSA share to use with the synchronization function.
USB Volume	If your USB device has multiple partitions, select which partition to use with the synchronization function.
Sync Direction	Select **USB -> NSA** to synchronize files from your USB device to the NSA. Select **NSA -> USB** to synchronize files from the NSA to your USB device. Select **NSA <-> USB** to synchronize files in both directions simultaneously.
Backup Files to be Replaced or Removed	Select this option to save the files that will be replaced by the source files.
Backup Target	Select a share in which to save the backup files. Note: The NSA will not create a new folder to store the backup files. It is recommended to create a specific share (such as “backup”) for backup purposes.
Apply	Click this to save your changes. The configuration file is saved on the USB device.
Reset	Click this to restore your previously saved settings.

7.9 The Flickr/YouTube Screen

The auto upload feature uploads media files stored in the NSA to the Flickr and/or YouTube sharing websites. Besides web publishing and media server, auto upload is another convenient way to share media files with your friends and family. You can link the NSA to your Flickr and/or YouTube account and select shares for the NSA to upload. The NSA uploads the media files stored in the specified shares to your Flickr and/or YouTube account. When you add new files to the specified shares, the NSA also automatically uploads the new files to your Flickr and/or YouTube account.

Click **Applications** > **Auto Upload > Flickr/YouTube** to open the following screen.

Figure 56 Applications > Auto Upload > Flickr/YouTube



The following table describes the labels in this screen.

Table 39 Applications > Auto Upload > Flickr/YouTube

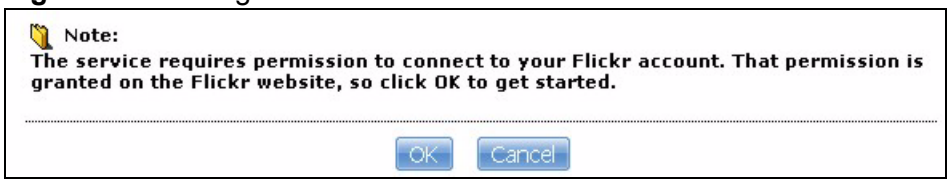
LABEL	DESCRIPTION
Disable/ Enable	Select a service from the list and click this to turn the service on or off. If you disable the service and add more files to the watch folder(s), the NSA will not auto upload these files. However, the NSA still uploads any files added before you turned off the service.
Pause/ Resume	Select a service from the list and click this to pause or resume the auto upload feature.
Config	Select a service from the list and click this to manage the service's settings.
Status	This field displays the service's status. The service may be **Enabled**, **Disabled**, **Uploading** or **Paused**.
Service Name	This field displays the name of a sharing website to which the NSA can automatically upload files.
Account Information	This field displays the username of the account to use with the auto upload feature.

7.9.1 Configuring the Flickr Settings

In the **Applications** > **Auto Upload > Flickr/YouTube** screen, select Flickr from the list and then click the **Config** button.

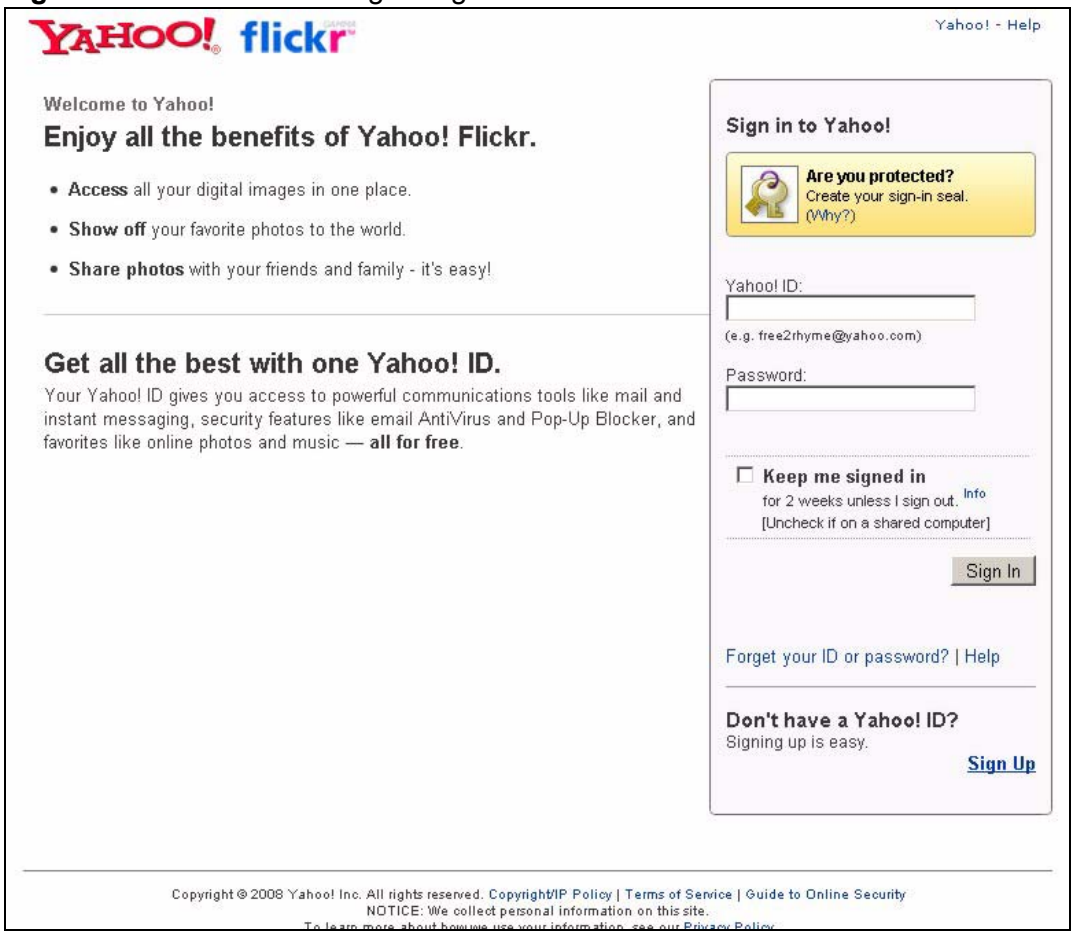
The following screen displays if you have not authorized the NSA to use a Flickr account. Click **OK** to continue the authorization process.

Figure 57 Linking NSA to Flickr


Note:
The service requires permission to connect to your Flickr account. That permission is granted on the Flickr website, so click OK to get started.
OK
Cancel

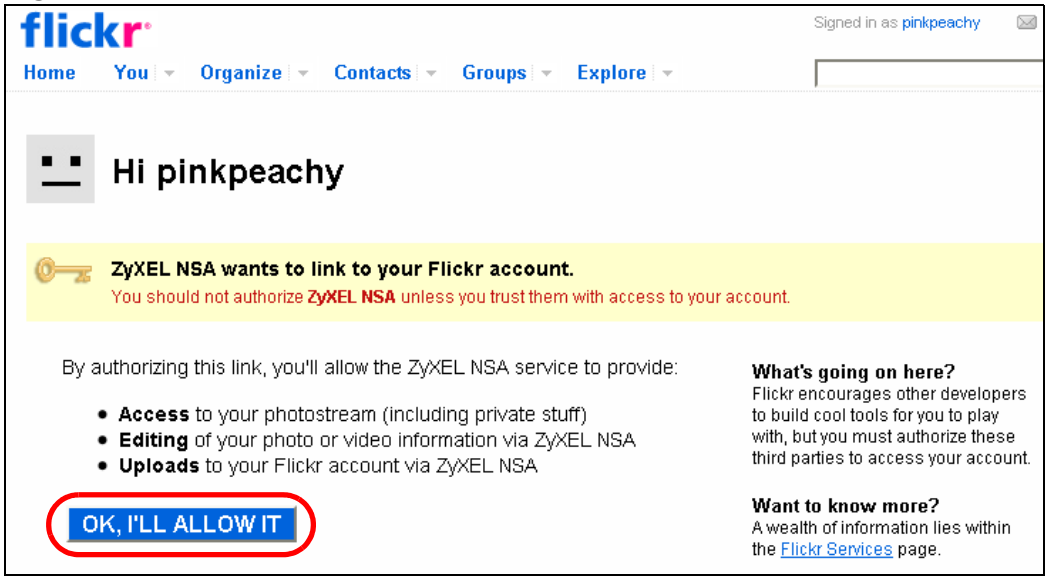
The web browser opens the Yahoo! Flickr login page. Enter your Yahoo account's information and click **Sign In**.

Figure 58 Yahoo! Flickr Login Page


YAHOO! flickr
Yahoo! - Help
Welcome to Yahoo!
Enjoy all the benefits of Yahoo! Flickr.
Access all your digital images in one place.
Show off your favorite photos to the world.
Share photos with your friends and family - it's easy!
Get all the best with one Yahoo! ID.
Your Yahoo! ID gives you access to powerful communications tools like mail and instant messaging, security features like email AntiVirus and Pop-Up Blocker, and favorites like online photos and music — all for free.
Sign in to Yahoo!
Are you protected?
Create your sign-in seal.
(Why?)
Yahoo! ID:
(e.g. free2rhyme@yahoo.com)
Password:
Keep me signed in
for 2 weeks unless I sign out.
Info
[Uncheck if on a shared computer]
Sign In
Forget your ID or password? | Help
Don't have a Yahoo! ID?
Signing up is easy.
Sign Up
Copyright © 2008 Yahoo! Inc. All rights reserved. Copyright/IP Policy | Terms of Service | Guide to Online Security
NOTICE: We collect personal information on this site.

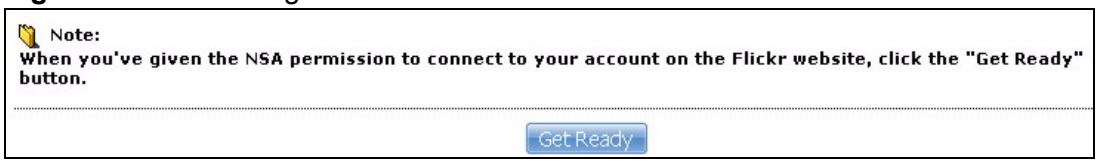
The following page displays asking for your authorization. Click **OK, I'LL ALLOW IT** to establish a link between the NSA and your Flickr account.

Figure 59 Flickr Authorization


flickr
Signed in as pinkpeachy
Home
You
Organize
Contacts
Groups
Explore
Hi pinkpeachy
ZyXEL NSA wants to link to your Flickr account.
You should not authorize ZyXEL NSA unless you trust them with access to your account.
By authorizing this link, you'll allow the ZyXEL NSA service to provide:
Access to your photostream (including private stuff)
Editing of your photo or video information via ZyXEL NSA
Uploads to your Flickr account via ZyXEL NSA
OK, I'LL ALLOW IT
What's going on here?
Flickr encourages other developers to build cool tools for you to play with, but you must authorize these third parties to access your account.
Want to know more?
A wealth of information lies within the Flickr Services page.

A confirmation page displays indicating successful authorization. Return to the NSA web configurator. Click **Get Ready** in the following screen to complete the authorization process.

Figure 60 Confirming Flickr Authorization


Note:
When you've given the NSA permission to connect to your account on the Flickr website, click the "Get Ready" button.
Get Ready

Once the NSA is associated with your Flickr account, you can configure auto upload settings in the following screen.

Figure 61 Applications > Auto Upload > Flickr/YouTube > Config (Flickr)

The following table describes the labels in this screen.

Table 40 Applications > Auto Upload > Flickr/YouTube > Config (Flickr)

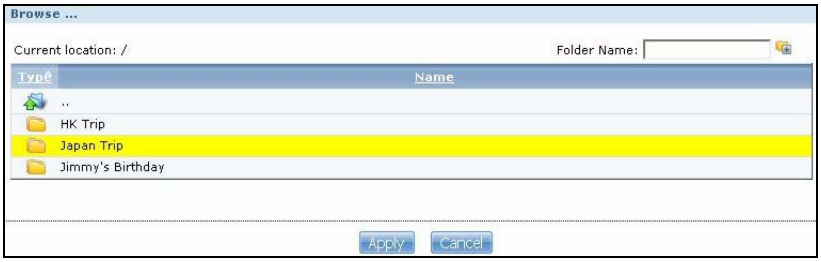
LABEL	DESCRIPTION
Flickr Account Configuration	
Username	This field displays the username authorized for the auto upload feature.
Account Information	This field displays how much storage space is available on your Flickr account.
Switch User	Click this to use a different Flickr account for the auto upload feature.
Folder Selection	
Folder Watch List	This table displays a list of shares and folders selected for auto upload. Files stored in these locations are uploaded to your Flickr account.
Status	This indicates whether the share is available. represents a valid folder. The share is available for auto upload. represents a missing folder. The share may be deleted from the NSA, or the hard disk was removed from the NSA.
Share Name	This is the share selected for auto upload.
Path	This is the path of a folder selected for auto upload. The NSA only uploads files stored in the specified share or folder to your Flickr account.
Action	Use the **Remove** icon to remove a share from the **Folder Watch List**.
Shares	Select a share for auto upload from the drop-down list.
Path	Select a folder on the NSA. You can use **Browse** to find or create a folder on the NSA or type the location of the folder using forward slashes as branch separators.
Browse	Click this to choose a folder from the selected share. Select a folder and then click **Apply**. If you click **Apply** without selecting a folder, a forward slash (/) displays in the **Path** field. All contents within the specified share are selected for auto upload. 
Add	Click this to add the specified share or folder to the **Folder Watch List**.
Grace Period Setting	

Table 40 Applications > Auto Upload > Flickr/YouTube > Config (Flickr) (continued)

LABEL	DESCRIPTION
Grace Period N minutes	Specify how long the NSA should wait when you add a new file for auto upload. For example, if you set the grace period to 5 minutes, the NSA uploads a new file after it has been in a watched folder for 5 minutes. You can choose from a range of 1 to 10080 minutes (up to one week).
Default Privacy Setting	
Who can see your media files on Flickr	Determine who has the right to see files uploaded to your Flickr account. Select **Only You** if you do not want anyone else to see your files. You may also restrict the access to **Your friends** and/or **Your family**. You can set up a friend/family list in your Flickr account. Select **Anyone** to allow everyone to see your files.
Hide from public site area	Check this option to prevent others from finding your files when they perform a search in the Flickr website.
Default Safety Level	Assign a safety level to your files. Select **Safe** if the contents of your files are suitable for the general public. Select **Moderate** if the contents of your files may be offensive to some people. Select **Restricted** if the contents of your files are not suitable for certain people, such as children or your colleagues.
Default Content Type	Select a content type for your files. You can choose **Photo**, **Screenshot**, or **Other**. **Other** types may include illustration, art, animation and etc.
Apply	Click this to save your changes.
Reset	Click this to begin restore your previously saved settings.

7.9.2 Configuring the YouTube Settings

In the **Applications** > **Auto Upload** > **Flickr/YouTube** screen, select YouTube from the list and then click the **Config** button.

Note: Your YouTube account must be associated with a Google account.

Get a Google account and use it to log into YouTube. You can then merge the existing YouTube account to your Google account.

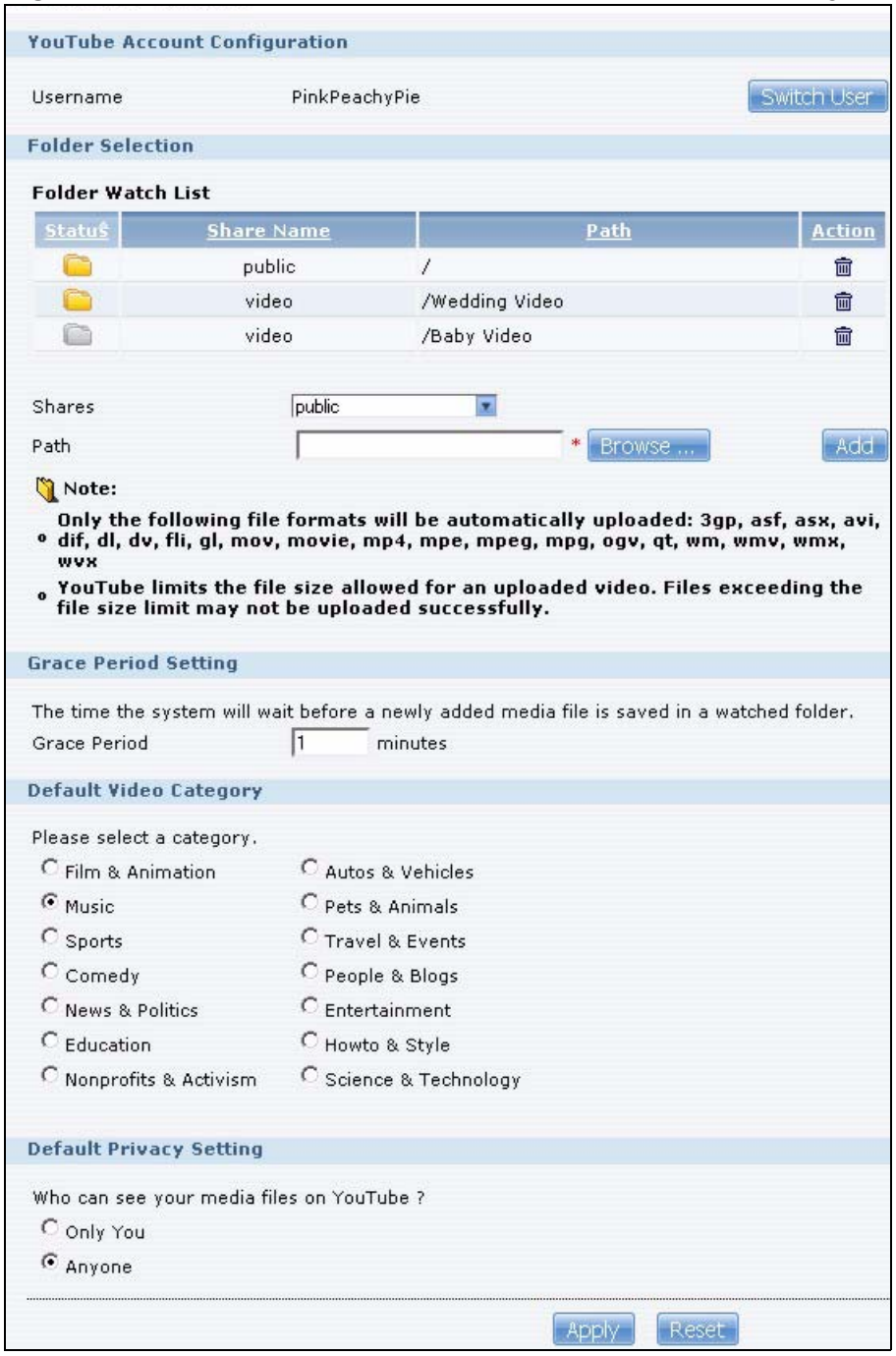
If you have not authorized a YouTube account on the NSA, the following screen displays. Enter your Google e-mail address and password in the fields and click **OK** to authorize the service.

Figure 62 YouTube Account Settings

YouTube Account Settings
Email
*
Password
*
Note:
To use this feature you must use a Google account that is linked to your YouTube account.
Please create a Google account if you do not have one. Login to YouTube using your Google account and then link your existing YouTube account or create a new YouTube account.
OK
Cancel

Once the NSA is associated with your YouTube account, you can configure auto upload settings in the following screen.

Figure 63 Applications > Auto Upload > Flickr/YouTube > Config (YouTube)



The following table describes the labels in this screen.

Table 41 Applications > Auto Upload > Config (YouTube)

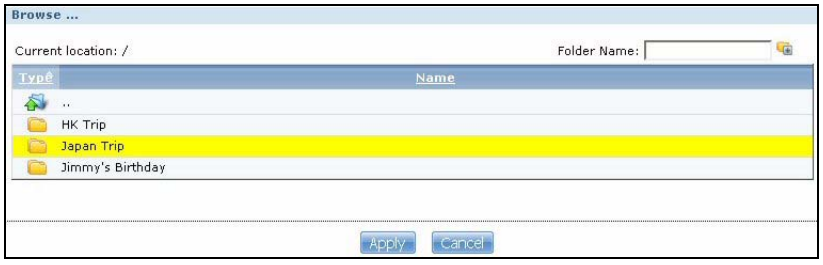
LABEL	DESCRIPTION
Flickr Account Configuration	
Username	This field displays the username authorized for the auto upload feature.
Switch User	Click this to use a different YouTube account for the auto upload feature.
Folder Selection	
Folder Watch List	This table displays a list of shares and folders selected for auto upload. Files stored in these locations are uploaded to your YouTube account.
Status	This field indicates whether the share is available. represents a valid folder. The share is available for auto upload. represents a missing folder. The share may be deleted from the NSA, or the hard disk was removed from the NSA.
Share Name	This field displays the share selected for auto upload.
Path	This field displays the path of a folder selected for auto upload. The NSA only uploads the files stored in the specified share or folder to your YouTube account.
Action	Use the **Remove** icon to delete a share from the **Folder Watch List**.
Shares	Select a share for auto upload from the drop-down list.
Path	Select a folder on the NSA. You can use **Browse** to find or create a folder on the NSA or type the location of the folder using forward slashes as branch separators.
Browse	Click this to choose a folder from the selected share. Select a folder and then click **Apply**. If you click **Apply** without selecting a folder, a forward slash (/) displays in the **Path** field. All contents within the specified share are selected for auto upload. 
Add	Click this to add the specified share or folder to the **Folder Watch List**.
Grace Period Setting	

Table 41 Applications > Auto Upload > Config (YouTube) (continued)

LABEL	DESCRIPTION
Grace Period N minutes	Specify how long the NSA should wait when you add a new file for auto upload. For example, if you set the grace period to 5 minutes, the NSA uploads a new file after it has been in a watched folder for 5 minutes. You can choose from a range of 1 to 10080 minutes (up to one week).
Default Video Category	Select the category that best describes the media files you want to upload.
Default Privacy Setting	
Who can see your media files on YouTube	Determine who has the right to see files uploaded to your YouTube account. Select **Only You** if you do not want anyone else to see your files. Select **Anyone** to allow everyone to see your files.
Apply	Click this to save your changes.
Reset	Click this to restore your previously stored settings.

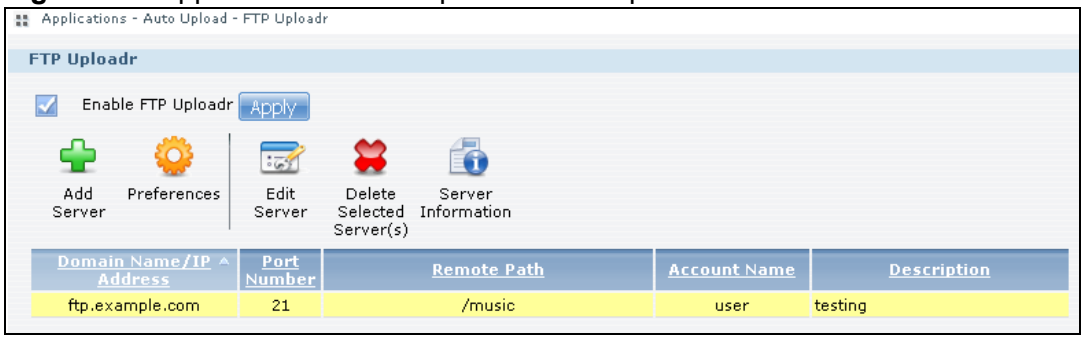
7.10 The FTP Uploadr Screen

The FTP Uploadr feature uploads files stored in the NSA to FTP servers. Besides web publishing and media server, auto upload is another convenient way to share media files with your friends and family. You can link the NSA to your FTP server or the FTP server on another NSA and select shares or folders for the NSA to upload. The NSA uploads the files stored in the specified shares to your FTP server. When you add new files to the specified shares, the NSA also automatically uploads the new files to your FTP server.

Use this screen to configure the FTP Uploadr.

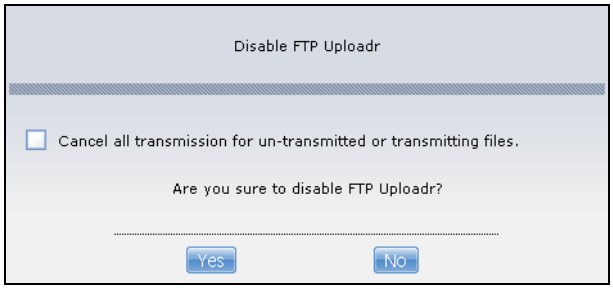
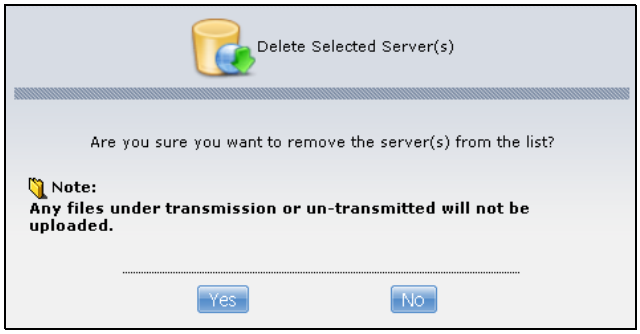
Click **Applications** > **Auto Upload** > **FTP Uploadr** to open the screen shown next.

Figure 64 Applications > Auto Upload > FTP Uploadr



The following table describes the labels in this screen.

Table 42 Applications > Auto Upload > FTP Uploadr

LABEL	DESCRIPTION
Enable FTP Uploadr	Use the check box to enable or disable the FTP Uploadr. Click **Apply** to save your changes. When you disable the FTP Uploadr, a screen opens requesting confirmation. Select the check box to stop any current or queued uploads. If you do not select the check box, the FTP Uploadr finishes uploading files already in the queue list. Click **Yes** to disable the FTP Uploadr. 
Add Server	Click this to add a target FTP server entry. See Section 7.10.1 on page 180 for more details.
Preferences	Click this to manage the settings of the FTP Uploadr.
Edit Server	Select a server from the list and click this to edit the FTP server entry.
Delete Selected Server(s)	Select a server from the list and click this to remove the FTP server entry. 
Server Information	Select a server from the list and click this to display the status and settings about the FTP server.
Domain Name/IP Address	This is the domain name or IP address of the FTP server.
Port Number	This is the port number used by the FTP server.
Remote Path	The NSA automatically uploads files to this location.
Account Name	This is the login account for the FTP server.
Description	This is the information related to the FTP server.

7.10.1 Adding or Editing an FTP Server Entry

Use this screen to add or edit an FTP server entry for auto upload.

In the **FTP Uploadr** screen, click the **Add Server** or **Edit Server** button to open the following screen.

Figure 65 Applications > Auto Upload > FTP Uploadr > Add or Edit a Server

The following table describes the labels in this screen.

Table 43 Applications > Auto Upload > FTP Uploadr > Add or Edit a Server

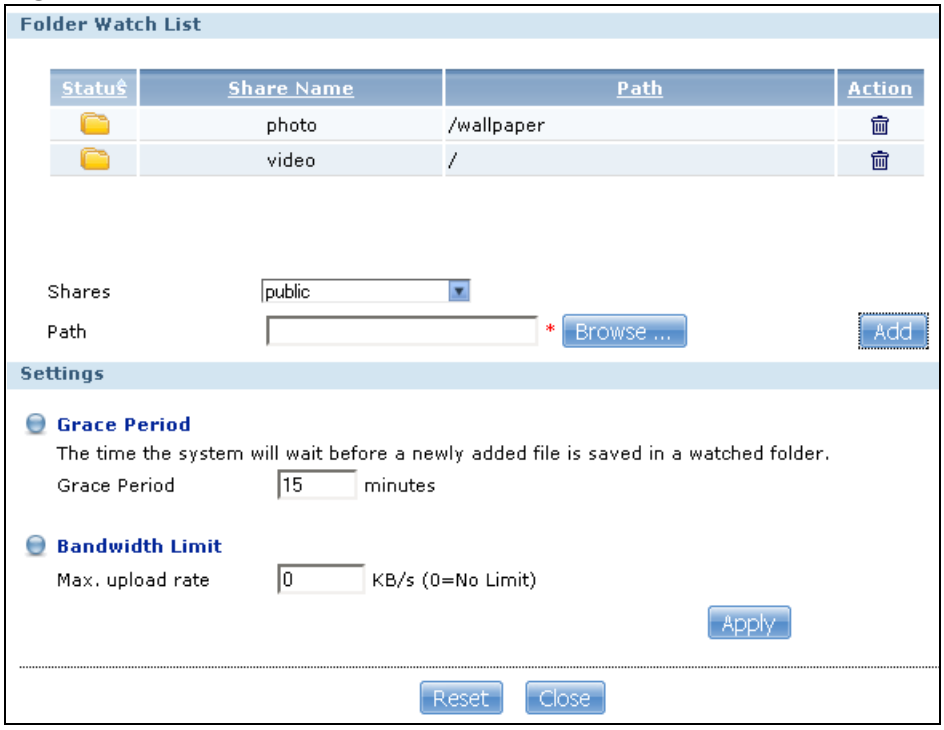
LABEL	DESCRIPTION
Domain Name/IP Address	Enter the domain name or IP address of the FTP server.
Account Name	Enter the account name used to access the FTP server.
Password	Enter the password associated with the account name.
Port Number	Enter the port number for the FTP server.
Remote Path	Enter the path to where the NSA automatically uploads files.
Description	Enter additional information about this FTP server.
Test Connection	Click this to test your setttings.
Apply	Click this to save your changes.
Cancel	Click this return to the previous screen without saving.

7.10.2 The FTP Uploadr Preferences Screen

Use this screen to configure the general settings for the FTP Uploadr.

In the **FTP Uploadr** screen, click the **Preferences** icon to open the following screen.

Figure 66 Applications > Auto Upload > FTP Uploadr > Preferences

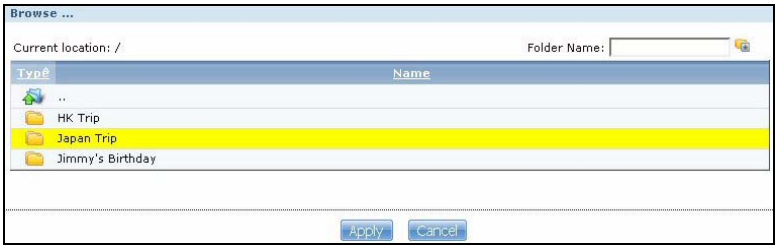


The following table describes the labels in this screen.

Table 44 Applications > Auto Upload > FTP Uploadr > Preferences

LABEL	DESCRIPTION
Folder Watch List	
Status	This indicates whether the share is available. represents a valid folder. The share is available for auto upload. represents a missing folder. The share may be deleted from the NSA, or the hard disk was removed from the NSA.
Share Name	This is the share selected for auto upload.
Path	This is the path of a folder selected for auto upload. The NSA only uploads files stored in the specified share or folder to your FTP server.
Action	Use the **Remove** icon to remove a share from the **Folder Watch List**.
Shares	Select a share for auto upload from the drop-down list.

Table 44 Applications > Auto Upload > FTP Uploadr > Preferences (continued)

LABEL	DESCRIPTION
Path	Select a folder on the NSA. You can use **Browse** to find or create a folder on the NSA or type the location of the folder using forward slashes as branch separators.
Browse..	Click this to choose a folder from the selected share. Select a folder and then click **Apply**. If you click **Apply** without selecting a folder, a forward slash (/) displays in the **Path** field. All contents within the specified share are selected for auto upload. 
Add	Click this to add the specified share or folder to the **Folder Watch List**.
Settings	
Grace Period	Specify how long the NSA should wait when you add a new file for auto upload. For example, if you set the grace period to 5 minutes, the NSA uploads a new file after it has been in a watched folder for 5 minutes. You can choose from a range of 1 to 10080 minutes (up to one week).
Bandwidth Limit	Enter the maximum upload rate for auto upload. You can choose from a range of 0 to 100,000 KB/s. Enter 0 if you do not want to set any limit. Use this to leave bandwidth on your network connection for other traffic, especially if your Internet connection has restricted upload speed.
Apply	Click this to save your changes in this section.
Reset	Click this to restore previously saved settings.
Close	Click this to return to the previous screen without saving.

PART III
Sharing

Users (185)

Groups (191)

Shares (195)

8 Users

8.1 Overview

This chapter introduces the **Users** screens of the NSA. Use the **Users** screens to create and manage administrator and user accounts.

Administrators can:

- Configure and manage the NSA.
- Create volumes, shares, and user accounts.
- Assign individual users specific access rights for specific shares.

Users are people who have access rights to the NSA and can store files there for later retrieval. A user can:

- Manage shares that he owns.
- Change his own password.
- Access the contents of other shares to which he is given access rights.

8.1.1 What You Can Do in the Users Screen

- Use the main **Users** screen (Section 8.2 on page 186) to display a list of user accounts created on the NSA.
- Use the **Add User** screen (Section 8.3 on page 188) to create new user accounts.
- Use the **Edit User** screen (Section 8.3 on page 188) to edit the properties of an existing account.
- Use the **User Info** screen (Section 8.4 on page 190) to display the amount of volume space used by a selected account and the account's membership in any groups.

8.2 The Users Screen

Click **Sharing** > **Users** to display the screen shown next.

Use this screen to create and manage accounts for users who can store files on the NSA.

Figure 67 Sharing > Users

The following table describes the labels in this screen.

Table 45 Sharing > Users

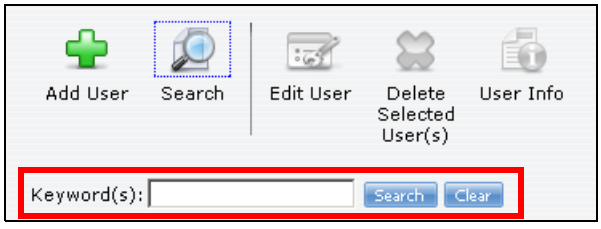
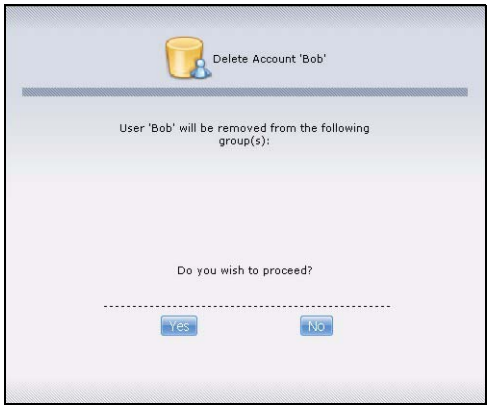
LABEL	DESCRIPTION
Add User	Click this to open a screen where you can configure a new user account.
Search	Click this to display a search field. Type in the name of an account and then click **Search** to look up the account you specified. Click **Clear** to close the search function. 
Edit User	Select an account and click this to open a screen where you can edit the properties of the account.

Table 45 Sharing > Users (continued)

LABEL	DESCRIPTION
Delete Selected Users	Select an account and click this to open a screen where you can delete the user account. 
User Info	Select an account and click this to open a screen displaying the amount of storage space used by the account. You can also check the account's membership in any groups.
Display Number	Click the drop-down menu to set how many accounts you want to display in one screen.
Go to Page	Click the drop-down menu to display and access more user accounts.
User Type	This field displays whether the selected account is an administrator account or a user account.
Username	This field displays the usernames of each account.

8.2.1 User Icons

The following table describes the user icons.

Table 46 User Icons

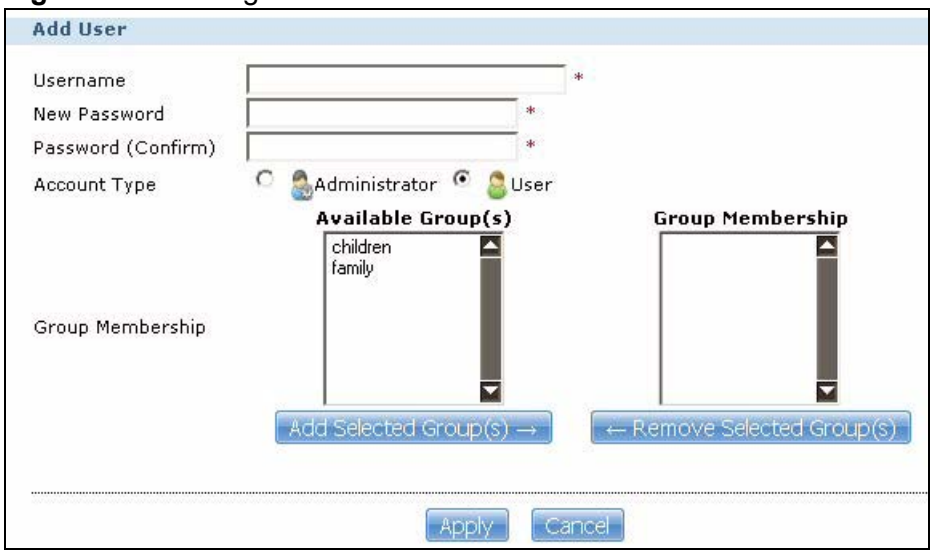
ICON	DESCRIPTION
	The blue icon is for an administrator account.
	The green icon is for a user account.

8.3 Adding or Editing an Account

Use this screen to create or edit a NSA user account with NSA access password.

Click the **Add User** button in the **Users** screen to open the following screen. Click the **Edit User** button in the screen shown previously to edit an existing account.

Figure 68 Sharing > Users > Add or Edit a User



The following table describes the labels in this screen.

Table 47 Users > Add or Edit a User

LABEL	DESCRIPTION
Username	Type a name from 1 to 32 single-byte (no Chinese characters allowed for example) ASCII characters. See Section 8.3.1 on page 189 for more details on usernames.
Password	Create a password associated with this user. You can type from one to 14 single-byte (no Chinese characters allowed for example) ASCII characters.
Password (Confirm)	You must type the exact same password that you just typed in the above field.
Account Type	Select **Administrator** to give the account full configuration and management access to the NSA. Select **User** to give the account basic access rights to the NSA and allow the user to manage his own shares, change his own password, and access the contents of other shares to which he is given access rights.
Group Membership	
Available Groups	This field lists the groups created on the NSA.
Group Membership	This field lists the groups that the selected account belongs to.
Add Selected Group(s)	Select a group from the **Available Groups** list and click this to add the account to that group.

Table 47 Users > Add or Edit a User (continued)

LABEL	DESCRIPTION
Remove Selected Group(s)	Select a group from the **Group Membership** list and click this to remove the account from that group.
Apply	Click this to save your changes.
Cancel	Click this to return to the previous screen without saving.

8.3.1 Usernames

Enter a username from one to 32 characters. The first character must be alphabetical (case insensitive, [A-Z a-z]); numeric characters are not allowed as the first character.

The username can only contain the following characters:

- Alphanumeric A-z 0-9. Unicode usernames are supported with CIFS logins, but not FTP or web configurator logins.
- Spaces
- _ [underscores]
- . [periods]
- - [dashes]

Other limitations on usernames are:

- All leading and trailing spaces are removed automatically.
- Multiple spaces within names are converted to a single space.
- Usernames are case insensitive. The username cannot be the same (no matter the letter case) as an existing user. For example, if a user exists with the name 'BOB', you cannot create a user named 'bob'. If you enter a user 'bob' but use 'BOB' when connecting via CIFS or FTP, it will use the account settings used for 'bob'.
- The username cannot be the same as a system username such as **ANONYMOUS_FTP** nor be the same as an existing user. Other reserved usernames that are not allowed are:
  - bin
  - daemon
  - ftp
  - anonymous-ftp
  - nobody
  - root
  - pc-guest
  - admin

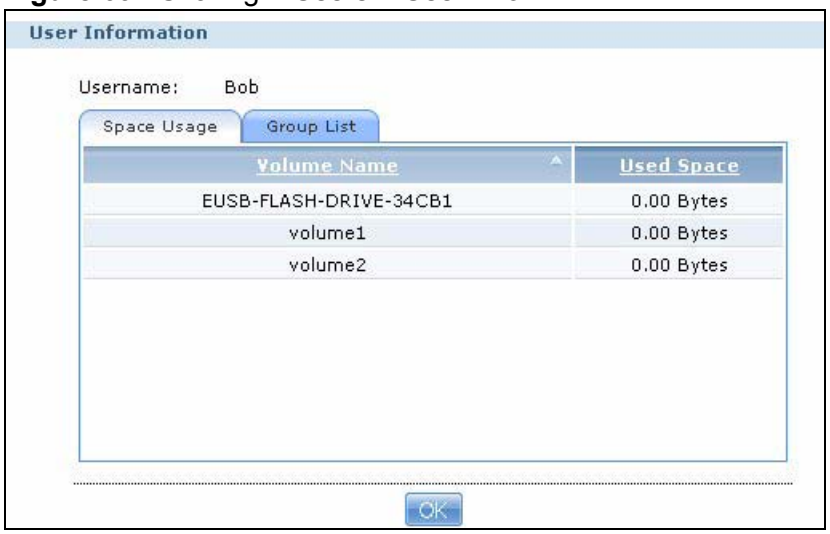
- password

8.4 Displaying User Info

Use this screen to display a user's information.

In the **Users** screen, select an account and click **User Info** to open the following screen.

Figure 69 Sharing > Users > User Info



The following table describes the labels in this screen.

Table 48 Sharing > Users > User Info

LABEL	DESCRIPTION
Usermame	This field displays the selected username.
Space Usage	Click this to display the amount of volume space used by the selected account.
Group List	Click this to display the selected user's group membership.
Volume Name	This field displays the volume(s) created on the NSA.
Used Space	This field displays how much storage space the selected account is currently using. This only applies for files that the user saved onto the NSA while logged in with that username.
OK	Click this to close the current screen.

9

Groups

9.1 Overview

This chapter introduces the **Groups** screens. Use the **Groups** screens to create and manage groups. You can assign users to groups and grant individual groups access rights to specific shares.

9.1.1 What You Can Do in the Groups Screen

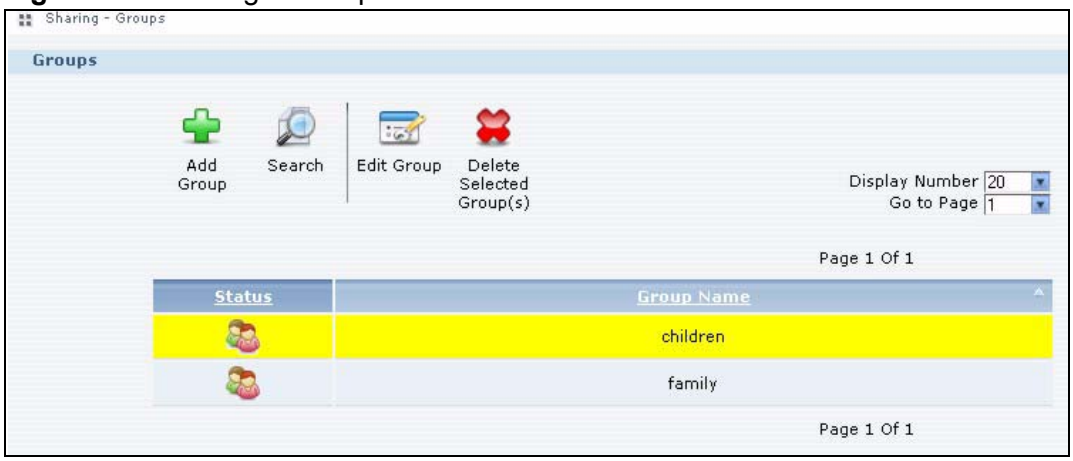
- Use the main **Groups** screen (Section 9.2 on page 191) to display and manage a list of groups created on the NSA.
- Use the **Add Group** screen (Section 9.2.1 on page 193) to create new groups.
- Use the **Edit Group** screen (Section 9.2.1 on page 193) to edit the properties of an existing group.

9.2 The Groups Screen

Use this screen to create and manage groups.

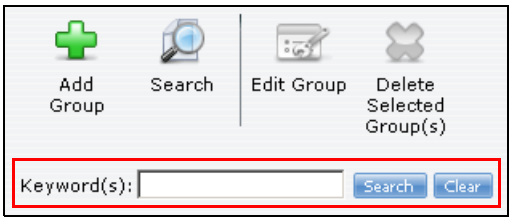
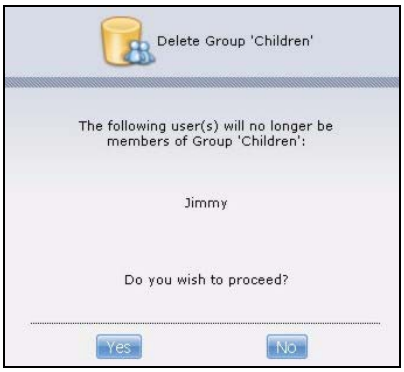
Click **Sharing** > **Groups** to display the screen shown next.

Figure 70 Sharing > Groups



The following table describes the labels in this screen.

Table 49 Sharing > Groups

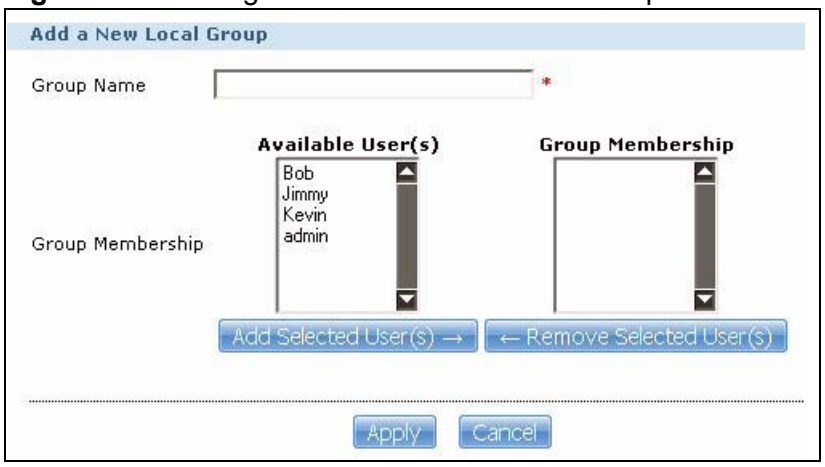
LABEL	DESCRIPTION
Add Group	Click this to open a screen where you can configure a new group.
Search	Click this to display a search field. Type the name of a group and then click **Search** to look up the group you specified. Click **Clear** to close the search function. 
Edit Group	Select a group and click this to open a screen where you can edit the properties of the selected group.
Delete Selected Group(s)	Select a group and click this to open a screen where you can delete the group. 
Display Number	Click the drop-down menu to set how many groups you want to display in one screen.
Go to Page	Click the drop-down menu to select a page number. Jump to a different page to display and access more groups.
Status	This field displays the group icon.
Group Name	This field displays the group names created on the NSA.

9.2.1 Adding or Editing a Group

Use this screen to create or edit a NSA group.

Click the **Add Group** button in the **Groups** screen to open the following screen. Click the **Edit Group** button in the screen shown previously to edit an existing group.

Figure 71 Sharing > Users > Add or Edit a Group



The following table describes the labels in this screen.

Table 50 Users > Add or Edit an Account

LABEL	DESCRIPTION
Group Name	Type a name from 1 to 32 single-byte (no Chinese characters allowed for example) ASCII characters. See Section 9.2.2 on page 194 for more details on group names.
Group Membership	Use this field to assign group membership to individual users.
Available User(s)	This field lists the user accounts created on the NSA that are not members of the current group.
Group Membership	This field lists the user accounts added to the group.
Add Selected User(s)	Select a user account from the **Available Users** list and click this to add the account to the group.
Remove Selected User(s)	Select a user account from the **Group Membership** list and click this to remove the account from the group.
Apply	Click this to save your changes.
Cancel	Click this to return to the previous screen without saving.

9.2.2 Group Names

Enter a group name from 1 to 30 characters. The first character must be alphabetical (case insensitive, [A-Z a-z]); numeric characters are not allowed as the first character.

The group name can only contain the following characters:

- Alphanumeric A-z 0-9. Unicode usernames are supported with CIFS logins, but not FTP or web configurator logins.
- Spaces
- _ [underscores]
- . [periods]
- - [dashes]

Other limitations on group names are:

- All leading and trailing spaces are removed automatically.
- Multiple spaces within names are converted to a single space.
- Group names are case insensitive. The group name cannot be the same (no matter the letter case) as an existing group. For example, if a group exists with the name 'FAMILY', you cannot create a group named 'family'.
- The group name cannot be the same as a system group name such as **EVERYONE** nor be the same as an existing group. Other reserved groups names that are not allowed are:
  - nobody
  - root

10 Shares

10.1 Overview

A share is a set of user access permissions mapped to a specific folder on a volume. It is equivalent to the Windows concept of a shared folder, but is independent of the folder. You can map a share to a network drive for easy and familiar file transfer for Windows users.

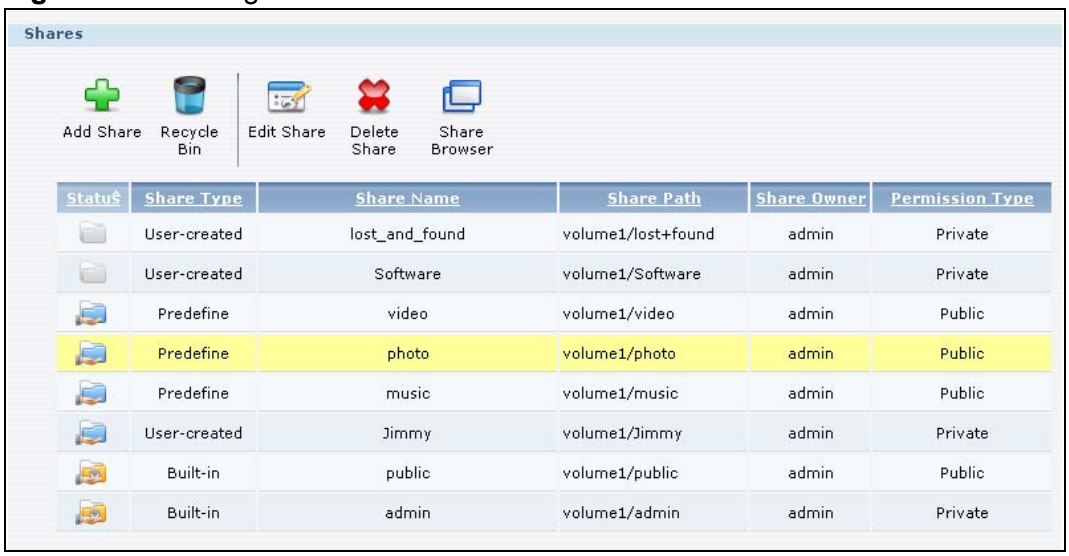
10.1.1 What You Can Do in the Shares Screens

- Use the **Shares** screen (Section 10.2 on page 196) to navigate a list of shares created on the NSA.
- Use the **Add Shares** screen (Section 10.3 on page 198) to create additional shares on the NSA.
- Use the **Configuration** screen (Section 10.4 on page 201) to configure and clean up the recycle bins.
- Use the **Change Share Properties** screen (Section 10.3 on page 198) to edit a share's properties.
- Use the **Share Browser** screen (Section 10.5 on page 202) to navigate, add and edit the contents in a share.

10.2 The Shares Screen

Click **Sharing > Shares** in the navigation panel to open the following screen. This screen lists all shares created on the NSA.

Figure 72 Sharing > Shares



The following table describes the labels in this screen.

Table 51 Sharing > Shares

LABEL	DESCRIPTION
Add Share	Click this to create a new share.
Recycle Bin	Click this to configure recycle bins.
Edit Share	Select a share and click this to edit the share.
Delete Share	Select a share and click this to remove or restrict access to the share. Disable Share "photo" I only want to disable this share so that no users are allowed access but the files continue to exist on the volume. I want to permanently delete all content associated with this share. Do you wish to proceed? Yes No
Share Browser	Select a share and click this to browse the share's contents.

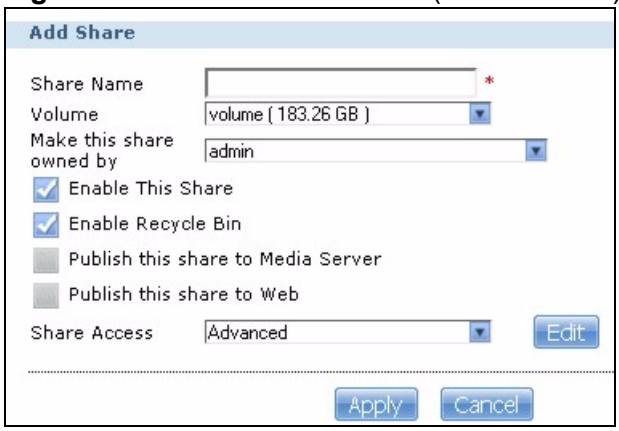
Table 51 Sharing > Shares (continued)

LABEL	DESCRIPTION
Status	This field displays the share icons. represents a **Built-in** share on a volume on the internal hard drives. represents a **Predefined** or **User-created** share on a volume on the internal hard drives. represents an **Auto** share on a volume on the external (USB) devices. represents a disabled share that no user can access. represents a missing share. The NSA cannot find the hard disk associated with the share (the disk may be removed from the NSA for example). You may install the disk back to the NSA to recover the share, or you may delete the share from the NSA.
Share Type	This field displays **Built-in** for system shares. You cannot delete these shares (these are the public and admin shares). This field displays **Predefined** for default shares. You can delete these shares (these are the video, music, and photo shares). This field displays **User-created** for shares that an administrator has created. You can delete these shares. This field displays **Auto** for shares located on an external (USB) device.
Share Name	This field displays the share's names.
Share Path	This field displays the share's file path, for example, volume1/ music.
Share Owner	This is the name of the user account to which this share belongs.
Permission Type	This field displays the access permission of a share. Everyone on the network can access a **Public** share. Only the share owner can access a **Private** share. An **Advanced** share allows you to assign specific access rights (read-only for example) to individual users/groups.

10.3 Adding or Editing Share

Click **Add Share** to create a new share. In the **Shares** screen, select a share and click **Edit Share** to open the following screen. Use this screen to create or edit a share.

Figure 73 Shares > Add Share (or Edit Share)



The following table describes the labels in this screen.

Table 52 Shares > Add Share (or Edit Share)

LABEL	DESCRIPTION
Share Name	Type a share name from 1 to 255 single-byte (no Chinese characters allowed for example) ASCII characters. The name cannot be the same as another existing local share. See Section 2.5.5 on page 38 for more information on share names.
Volume	You should have already created volumes (a single accessible storage area with a single file system) on the NSA. Select the one that contains the folder that you want to share out. You cannot modify this when editing a share.
Make this share owned by	Select the administrator or user account that is to own (manage) this share. The share owner controls access rights to the share.
Enable this share	Click this to allow access to this share.
Enable Recycle Bin	Click this to activate the recycle bin. When you delete a file from this share, a recycle folder is created to store the deleted item.
Publish this share to Media Server	Select this option to have the NSA share files in this folder with media clients. The media clients do not have to use a password to play the shares you publish.
Publish this share to Web	Select this option to let people use a web browser to access this share's files without logging into the My NSA screens.

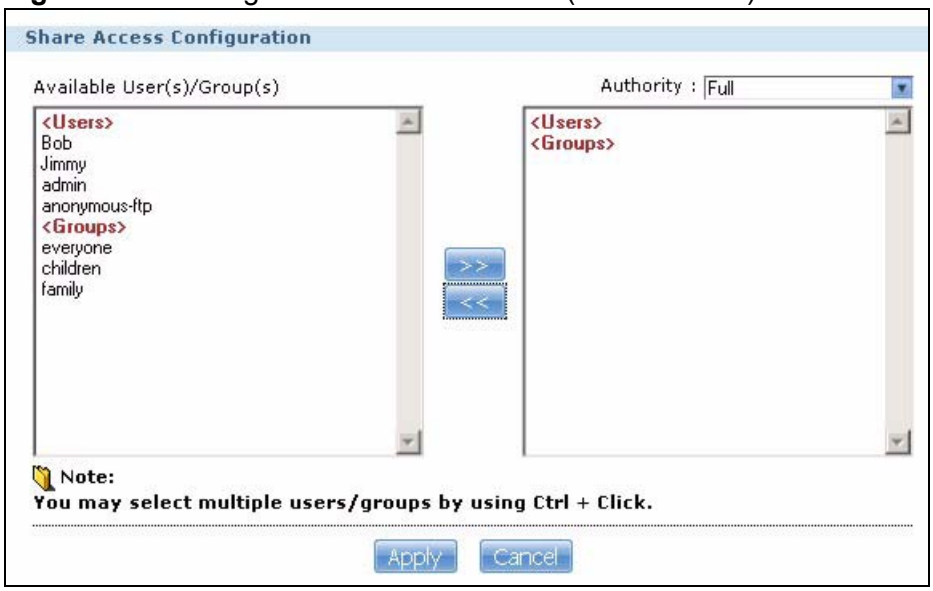
Table 52 Shares > Add Share (or Edit Share) (continued)

LABEL	DESCRIPTION
Share Access	Assign access rights (full, read only or deny) to users. If you publish the share to the media server or the web, all users will have at least read-only access to the share, regardless of what you configure here. **Keep it private to owner** means only the share owner (selected above) can access the share. **Make it Public** means every user (including people who do not have accounts on the NSA) can access the share. **Advanced** allows you to assign specific access rights (full, read only or deny) to individual users/groups.
Edit	This button is available only when you select **Advanced** share access. Click this to configure advanced share acess rights.
Apply	Click this to save your changes.
Cancel	Click this to return to the previous screen without saving.

10.3.1 Configuring Advanced Share Access

In the **Sharing** > **Shares** > **Add Share** or **Edit Share** screen, select **Advanced** from the **Share Access** drop-down list. Click **Edit** to open the following screen. Use this screen to configure share access rights for individual users and groups.

Figure 74 Sharing > Shares > Add Share (or Edit Share) > Advanced



The following table describes the labels in this screen.

Table 53 Sharing > Shares > Add Share (or Edit Share) > Advanced

LABEL	DESCRIPTION
Available Users/ Groups	This field lists the users/groups you can assign access rights.
Authority	Use this field to assign access rights to users/groups. **Full Control** gives users/groups full access (read, write and execute) to all files contained within this share. **Read-Only** gives users/groups read-only access (they cannot modify nor execute) to all files contained within this share. **Deny** blocks access (users/groups cannot read, modify, nor execute) to all files contained within this share. Among all access rights, **Deny** has the highest priority. For example, User A belongs to Group 1. You assign User A full access rights to the Music share but deny access rights to Group 1. Then User A cannot access the Music share. Note: If you deny access to all users, no-one can use the share, not even the administrator.
	Click an arrow button to move users/groups between the left and right fields. Use the arrow buttons to assign access rights to users/groups.
Apply	Click this to save your changes.
Cancel	Click this to return to the previous screen without saving.

10.3.2 Public and ANONYMOUS Share Access Rights

If you make a share public, users do not need to log in.

With **ANONYMOUS FTP**, you must enter either 'anonymous' or 'ftp' as the username. Any other name is considered a username, so must be valid and have a corresponding correct password.

10.4 The Recycle-Bin Configuration Screen

Use this screen to periodically clean up items in all recycle bins.

10.4.1 Recycle Bins

Recycle bins in the NSA help users recover accidentally deleted files or folders in the shares. When you delete an item, a recycle folder is created within the share to hold the deleted item.

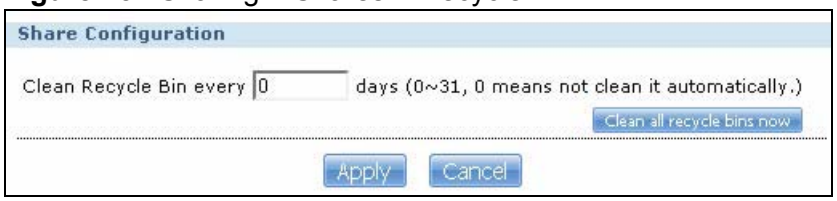
Every share can have its own recycle folder. You must enable the recycle-bin function to recycle deleted items. You can configure this setting when you add or edit a share. See Section 10.3 on page 198 for details on activating the recycle bin in a share.

Later if you want to retrieve a deleted item, you can locate the item in the recycle folder. You may move or copy the deleted item to another share.

10.4.2 Configuring Recycle Bins

In the **Sharing** > **Shares** screen, click **Recycle Bin** to open the following screen.

Figure 75 Sharing > Shares > Recycle Bin


Share Configuration
Clean Recycle Bin every 0 days (0~31, 0 means not clean it automatically.)
Clean all recycle bins now
Apply
Cancel

The following table describes the labels in this screen.

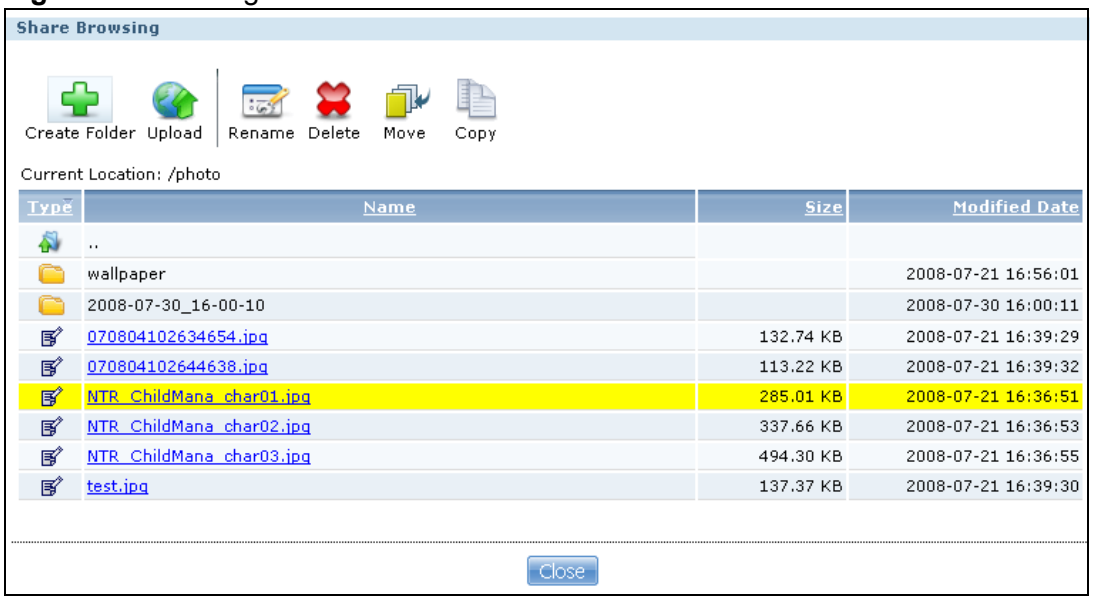
Table 54 Sharing > Shares > Recycle Bin

LABEL	DESCRIPTION
Clean Recycle Bin every N days	Specify how often you want to clear the contents in all recycle bins. The specified days correspond to how long a file has been stored in a recycle bin. For example, if you set the interval to be 3 days, recycle bins will clean up items deleted or not accessed for 3 days. Note: Cleaning up recycle bins permanently removes the files from the NSA.
Clean all recycle bins now	Click this to immediately remove contents from all recycle bins.
Apply	Click this to save your changes.
Cancel	Click this to return to the previous screen without saving.

10.5 The Share Browser Screen

Use this screen to create folders, upload files, and edit files within the share.

Figure 76 Sharing > Shares > Share Browser



The following table describes the labels in this screen.

Table 55 Sharing > Shares > Share Browser

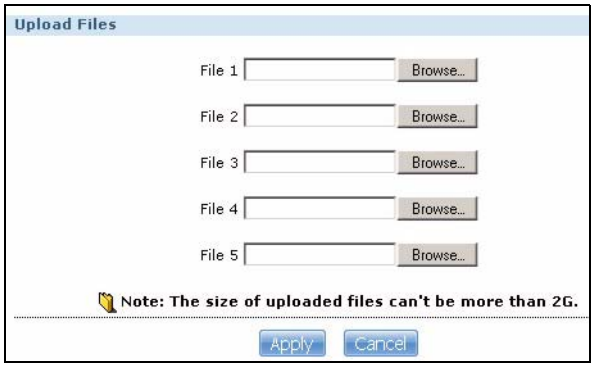
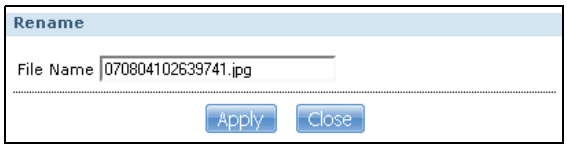
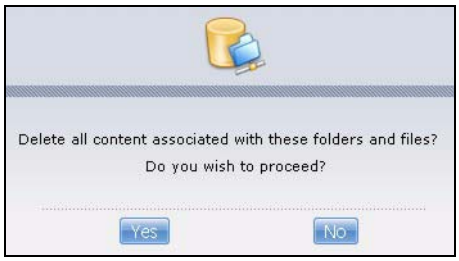
LABEL	DESCRIPTION
Create Folder	Type a folder name and click **Apply** to make a new folder. The name can be 1 to 255 single-byte (no Chinese characters allowed for example) ASCII characters. The name cannot be the same as another existing folder in the same path. See Section 2.5.5 on page 38 for more information on folder names.
Upload	Click this to add files to the share. Use **Browse** to locate a file and click **Apply** to upload the file. 

Table 55 Sharing > Shares > Share Browser (continued)

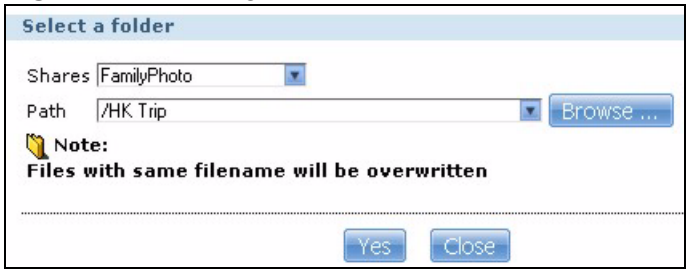
LABEL	DESCRIPTION
Rename	Select a folder or file and click this to open a screen. Enter the name you want and click OK to make the changes. Note: When you change a file name, make sure you keep the file extention. 
Delete	Select a file from the list and click this to open a warning screen. Click **Yes** to delete the file, or click **No** to close the screen. 
Move	Select a file from the list and click this to relocate the file to another share.
Copy	Select a file from the list and click this to make a duplicate of the file to another share.
Current location	This is the name of the share and folder path that you are in.
Type	The icon in this column identifies the entry as a folder or a file. The folder with an arrow pointing up is for the link that takes you to the next higher layer in the share's folder tree.
Name	This section lists the volume's existing folders. Select the one for which you want to create a share (click to the right of the folder name to select). You can also click the folder's name to navigate to a sub-folder within the folder.
Size	This field displays a file size.
Modified Date	This field displays a file's latest modification date.
Close	Click this to close the screen.

10.5.1 Moving or Copying Files

Use this screen to move or copy files to another share.

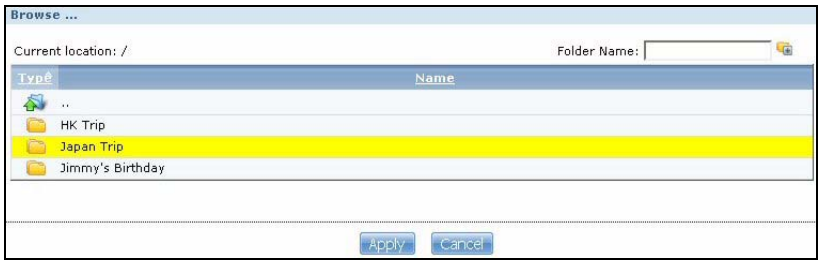
In the **Share Browser** screen, select a file or folder and click **Move** or **Copy** to open the following screen.

Figure 77 Sharing > Shares > Share Browser > Move (or Copy)



The following table describes the labels in this screen.

Table 56 Sharing > Shares > Configuration

LABEL	DESCRIPTION
Shares	Select the destination share from the drop-down list.
Path	This field displays the share folder's path. You can use **Browse** to find or create a folder on the NSA or type the location of the folder using forward slashes as branch separators.
Browse	Click this to put the file in a specific folder. Select a folder and then click **Apply**. If you click **Apply** without selecting a folder, a forward slash displays in the **Path** field. All contents within the specified share are selected. 
Yes	Click this to move or copy the file to the designated share.
Close	Click this to return to the **Share Browser** screen.

PART IV
Maintenance and Protecting Data

Maintenance Screens (207)

Protecting Your Data (227)

11

Maintenance Screens

11.1 Overview

This chapter discusses the **Maintenance** screens. The **Maintenance** screens allow you to manage system configurations.

11.1.1 What You Can Do in the Maintenance Screens

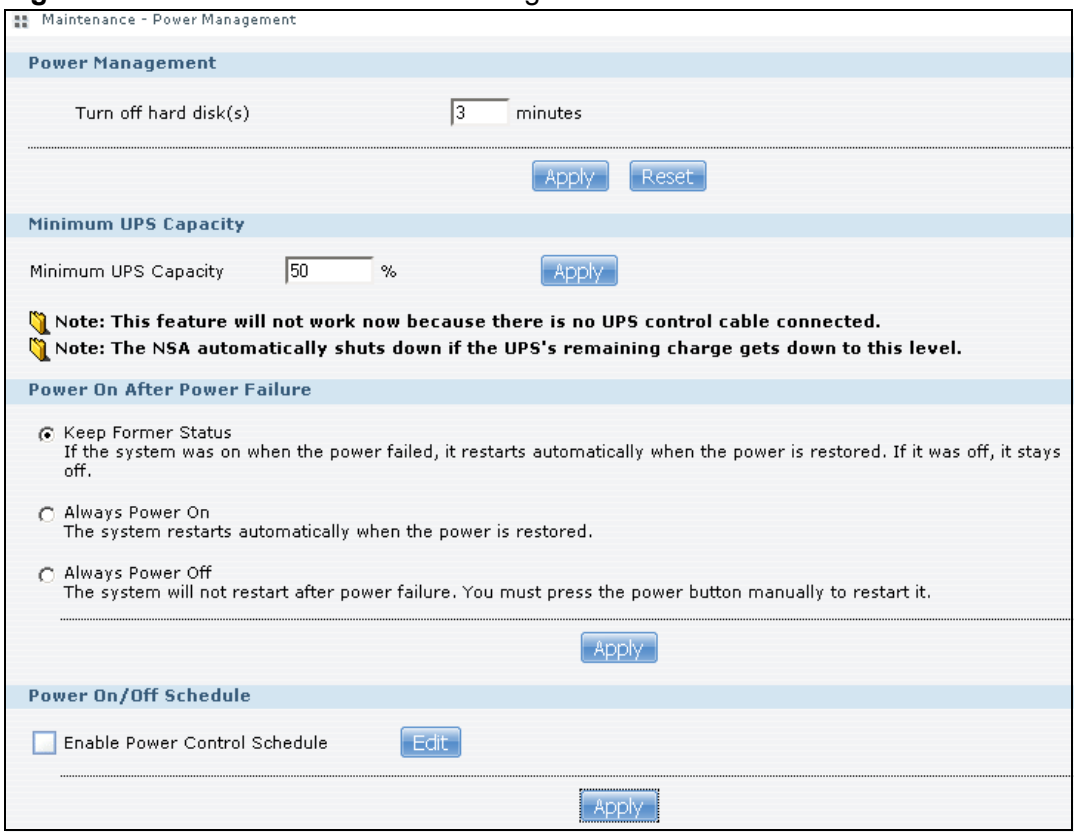
- Use the **Power Management** screen (Section 11.2 on page 208) to set up power saving for the hard disks installed in the NSA.
- Use the **Log** screen (Section 11.3 on page 212) to check the system's logs.
- Use the **Configuration** screen (Section 11.5 on page 220) to manage the NSA configuration file.
- Use the **SSL** screen (Section 11.6 on page 221) to configure HTTPS and the NSA's SSL certificate.
- Use the **Firmware Upgrade** screen (Section 11.7 on page 224) to upload new firmware.
- Use the **Shutdown** screen (Section 11.8 on page 225) to restart or shut down your NSA.

11.2 The Power Management Screen

Use this screen to manage power saving for the hard disks installed on the NSA.

Click **Maintenance** > **Power Management** to display the following screen.

Figure 78 Maintenance > Power Management


Maintenance - Power Management
Power Management
Turn off hard disk(s)
3
minutes
Apply
Reset
Minimum UPS Capacity
Minimum UPS Capacity
50
%
Apply
Note: This feature will not work now because there is no UPS control cable connected.
Note: The NSA automatically shuts down if the UPS's remaining charge gets down to this level.
Power On After Power Failure
Keep Former Status
If the system was on when the power failed, it restarts automatically when the power is restored. If it was off, it stays off.
Always Power On
The system restarts automatically when the power is restored.
Always Power Off
The system will not restart after power failure. You must press the power button manually to restart it.
Apply
Power On/Off Schedule
Enable Power Control Schedule
Edit
Apply

The following table describes the labels in this screen.

Table 57 Maintenance > Power Management

LABEL	DESCRIPTION
Power Management	
Turn off hard disk(s)	Enter the number of minutes the NSA will sit idle before spinning the hard disks down to sleep. The default power-off time is 3 minutes.
Apply	Click this to save your changes in this section.
Reset	Click this to restore your previously saved settings.
Minimum UPS Capacity	

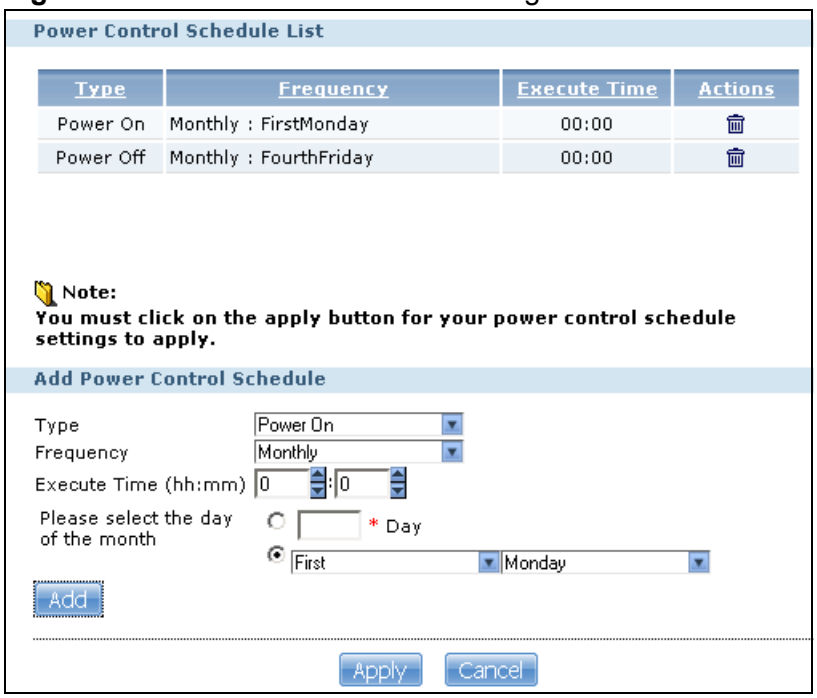
Table 57 Maintenance > Power Management (continued)

LABEL	DESCRIPTION
Minimum UPS Capacity	When you use an APC Uninterruptible Power Supply (UPS) with a USB connection to the NSA, the NSA shuts itself down if the APC UPS's battery charge gets down to the percentage you specify in this field. This allows the NSA to shut down properly and avoid data loss caused by a power failure when the UPS stops supplying power. A setting around 50% is recommended. A setting close to 100% is not recommended since it would cause the NSA to shut down whenever the UPS is charging. A setting close to 0 is also not recommended since the UPS would not have enough power to allow the NSA to shutdown properly.
Apply	Click this to save your changes in this section.
Power On After Power Failure	Select an option to set whether or not the NSA restarts when the power is restored after a power failure.
Keep Former Status	Select this option to have the NSA automatically restart only if it was operating when the power failed. The NSA remains off if it was already off when the power failed.
Always Power On	Select this option to keep the NSA operating as much of the time as possible. The NSA restarts automatically even if it was turned off when the power failed.
Always Power Off	Select this option to keep the NSA from automatically restarting when the power is restored after a power failure. This is a computer's "traditional" behavior. Select this if you have other servers such as a domain controller or DNS server that you want to start or check after a power failure before the NSA turns on.
Apply	Click this to save your changes in this section.
Power On/Off Schedule	
Enable Power Control Schedule	Select this option to have the NSA turn itself off and on or reboot according to the schedules you configure. Click **Edit** to go to the screen where you can configure the power control schedules.
Apply	Click this to save your changes in this section.

11.2.1 Editing the Power Control Schedule Screen

Click **Maintenance > Power Management > Edit** to open this screen. Use this screen to configure power control schedules to have the NSA turn on, turn off, or reboot at specified times.

Figure 79 Maintenance > Power Management > Edit



The following table describes the labels in this screen.

Table 58 Maintenance > Power Management > Edit

LABEL	DESCRIPTION
Power Control Schedule List	This table lists the power on, power off, and reboot schedules. For example, you could have one schedule to turn the NSA on every morning, at 8:00, another schedule to turn it off every evening at 18:00, and a third schedule to have it reboot every Friday at 14:00. Click a column's heading cell to sort the schedules by that column's criteria. Click the heading cell again to reverse the sort order.
Type	This field displays whether the power control schedule has the NSA turn on, turn off, or reboot.
Frequency	This field shows how often (monthly, weekly, or daily) the NSA is to apply this power control schedule.
Execute Time	This field shows when the NSA is to use this power control schedule (when the NSA is to turn on, turn off, or reboot).
Actions	Click the **Delete** icon to remove a power control schedule from the list.
Add Power Control Schedule	Use this part of the screen to configure power on, power off, and reboot times.

Table 58 Maintenance > Power Management > Edit (continued)

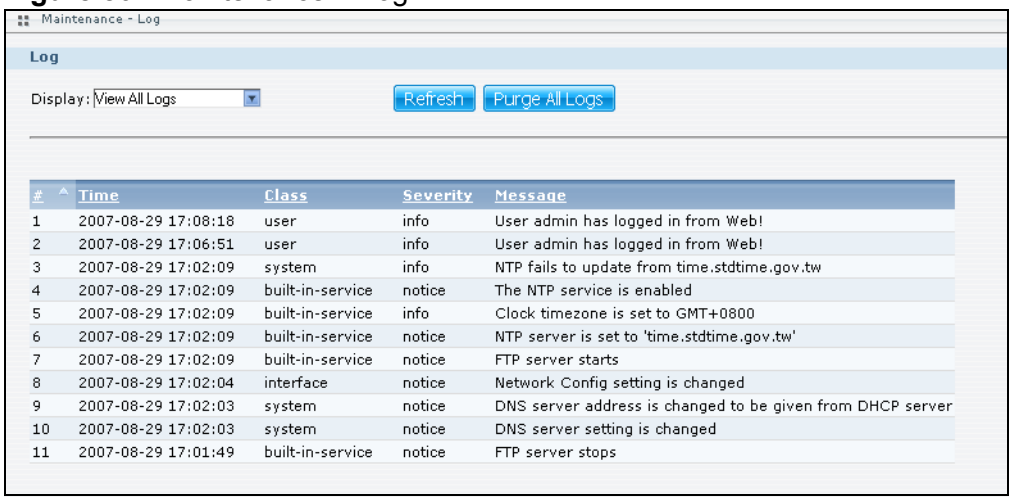
LABEL	DESCRIPTION
Type	Select whether this power control schedule has the NSA turn on, turn off, or reboot.
Frequency	Select whether the NSA is to apply this power control schedule entry on a monthly, weekly, or daily basis.
Execute Time (hh:mm)	Enter the time, day, and/or day of the month as appropriate for this power control schedule entry. Leave more than 10 minutes between the execution times of the entries. If the NSA turns off or restarts while a user is transferring files to or from the NSA, the transfer fails. The user will need to restart the transfer. The NSA skips a scheduled restart or power off if the execution time comes while the NSA is doing any of the following: • Resynchronizing a RAID • Upgrading firmware • Replacing the configuration file If the NSA is turned off at the time when a restart or power off is scheduled, the NSA does not perform the restart or power off. If the NSA is turned on at the time when a power on is scheduled, the NSA does not perform the power on.
Please select the day of the month	Use this part of the screen to configure power on, power off, and reboot times.
Add	Click this to add the power control schedule to the list.
Apply	Click this to save your changes.
Cancel	Click this to return to the previous screen without saving.

11.3 The Log Screen

Click **Maintenance > Log** to open the following screen.

Use this screen to display all NSA logs. There are at most 128 entries in the log. Older logs are removed by the system. You cannot download the log file via FTP or CIFS.

Figure 80 Maintenance > Log


Maintenance - Log
Log
Display: View All Logs
Refresh
Purge All Logs
Time Class Severity Message
1 2007-08-29 17:08:18 user info User admin has logged in from Web!
2 2007-08-29 17:06:51 user info User admin has logged in from Web!
3 2007-08-29 17:02:09 system info NTP fails to update from time.stdtime.gov.tw
4 2007-08-29 17:02:09 built-in-service notice The NTP service is enabled
5 2007-08-29 17:02:09 built-in-service info Clock timezone is set to GMT+0800
6 2007-08-29 17:02:09 built-in-service notice NTP server is set to 'time.stdtime.gov.tw'
7 2007-08-29 17:02:09 built-in-service notice FTP server starts
8 2007-08-29 17:02:04 interface notice Network Config setting is changed
9 2007-08-29 17:02:03 system notice DNS server address is changed to be given from DHCP server
10 2007-08-29 17:02:03 system notice DNS server setting is changed
11 2007-08-29 17:01:49 built-in-service notice FTP server stops

The following table describes the labels in this screen.

Table 59 Maintenance > Log

LABEL	DESCRIPTION
Display	The screen always shows all logs by default. Choose a specific log category to view logs for just that category.
Refresh	Click this to update the log display.
Purge all Logs	Click this to erase all logs from the NSA.
#	This is the log entry's number in the list according to the currently selected sort order.
Time	This shows the date and time the log was created. Click the top of the column to sort by oldest or newest.
Class	This displays the log category; see Table 60 on page 213 for details.
Severity	This displays how serious the log is rated by the NSA. See Table 61 on page 213 for more information.
Message	This displays a description of the log. Click the top of the column to sort by alphabetical or reverse alphabetical order.
First/Prev	Use these hyperlinks to navigate to the first or previous log page.
Next/Last	Use these hyperlinks to navigate to the next or final log page.

11.3.1 Log Classes

The following table shows information on log classes.

Table 60 Log Classes

LOG CATEGORY	DESCRIPTION
Network	This log class shows information on network configuration, setting changes and so on.
Services	This log class shows information on the operation of the NSA's built-in services.
Shares	This log class shows information on shares being created or deleted.
System	This log class shows all other system related messages.
Users	This log class shows information on user access to the NSA.

11.4 Log Severity Levels

The following table shows information on log severity levels. Levels range from 0 to 6 with 0 being the most severe level log and 6 being an informational log only. Log levels are not displayed in the logs and are for your reference only.

Table 61 Log Severity Levels

LEVEL	DESCRIPTION
0	Emergency
1	Alert
2	Critical
3	Error
4	Warning
5	Notice
6	Info

11.4.1 Log Messages

Here are some example log messages.

Table 62 Log Messages

CLASS	SEVERITY	MESSAGE
Auto upload	INFO	%s is queued.
Auto upload	INFO	%s uploaded (Flickr or YouTube Upload).
Auto upload	WARNING	error uploading "%s" (%s): %s

Table 62 Log Messages (continued)

CLASS	SEVERITY	MESSAGE
Auto upload - FTP uploadr	INFO	%s will not be uploaded to %s for there is already a duplicate file.
Auto upload - FTP uploadr	INFO	Failed to upload %s to %s (FTP Upload) : %s
Auto upload - FTP uploadr	INFO	Successfully upload %s to %s (FTP Upload)
Copy/Sync Button	ERROR	[USB %s] Backup Folder Does Not Exist.
Copy/Sync Button	ERROR	[USB %s] Target Folder Does Not Exist.
Copy/Sync Button	ERROR	[USB Sync] Failed at %s: It is a Folder in Internal Volume. But It is not a Folder in USB.
Copy/Sync Button	ERROR	[USB Sync] Failed at %s: It is a Folder in USB. But It is not a Folder in Internal Volume.
Copy/Sync Button	ERROR	[USB Sync] Failed at File %s.
Copy/Sync Button	ERROR	[USB Sync] Sync Failed at Folder %s.
Copy/Sync Button	ERROR	Modify COPY/SYNC Button Configuration: %s
Copy/Sync Button	ERROR	Please Change Your Folder Name. Invalid Path: %s
Copy/Sync Button	INFO	[USB Sync] Copying %s from Internal Volume to Backup Folder.
Copy/Sync Button	INFO	[USB Sync] Copying %s from Internal Volume to USB.
Copy/Sync Button	INFO	[USB Sync] Copying %s from USB to Backup Folder.
Copy/Sync Button	INFO	[USB Sync] Copying %s from USB to Internal Volume.
Copy/Sync Button	INFO	[USB Sync] Deleting %s from Internal Volume.
Copy/Sync Button	INFO	[USB Sync] Deleting %s from USB.
Copy/Sync Button	INFO	[USB Sync] Deleting %s from USB Recursively.
Copy/Sync Button	INFO	[USB Sync] Finished. Elapsed Time %s Seconds.
Copy/Sync Button	INFO	[USB Sync] Moving %s from Internal Volume to Backup Folder.
Copy/Sync Button	INFO	[USB Sync] Moving %s from USB to Backup Folder

Table 62 Log Messages (continued)

CLASS	SEVERITY	MESSAGE
Copy/Sync Button	INFO	[USB Sync] Skip %s: File not Exist
Copy/Sync Button	INFO	[USB Sync] Skip %s: Not a Regular File.
Copy/Sync Button	INFO	[USB Sync] Start Pre-Processing: Generating File Lists.
Copy/Sync Button	NOTICE	[USB Sync] Start Copying Files.
Download Service	ERROR	Download service cannot find a volume
Download Service	ERROR	Download service failed to find ipfilter.dat
Download Service	INFO	Download service add a URL download job %s
Download Service	INFO	Download service delete %s by user
Download Service	INFO	Download service download %s error (0x%08x)
Download Service	INFO	Download service download %s finished in %s
Download Service	INFO	Download service found a new torrent file %s
Download Service	INFO	Download service initialized
Download Service	INFO	Download service pause %s by user
Download Service	INFO	Download service set %s to %s priority by user
Download Service	INFO	Download service set default download location to %s
Download Service	INFO	Download service set max BT download rate to %d KB/s by user
Download Service	INFO	Download service set max BT upload rate to %d KB/s by user
Download Service	INFO	Download service set max download slot to %d
Download Service	INFO	Download service set seeding time to %d minutues
Download Service	INFO	Download service set TCP port to %d and UDP port to %d
Download Service	INFO	Download service set torrent monitor location to %s
Download Service	INFO	Download service start to download %s

Table 62 Log Messages (continued)

CLASS	SEVERITY	MESSAGE
Download Service	INFO	Download service stopped
Download Service	INFO	Download service suspend %s because of no data income detected or to limit max download slot
Download Service	INFO	Download service add comment %s to %s by user
Download Service	INFO	Download service set min upload/download ratio to %d%
Download Service	INFO	Download service set max seed slot to %d
Download Service	INFO	Download service start loading ipfilter.dat
Download Service	INFO	Download service clear all ipfilter rules
Download Service	INFO	Download service blocked peer removed from peer list
Download Service	INFO	Download service disconnected blocked peer
Download Service	INFO	Download service incoming connection blocked by IP filter
Download Service	INFO	Download service peer from tracker blocked by IP filter
Download Service	INFO	Download service abort loading ipfilter.dat
Download Service	INFO	Download service will update ipfilter.dat from %s after %d day(s)
Download Service	INFO	Download service added 500 rules from ipfilter.dat
Download Service	INFO	Download service detected invalid ip range %s in ipfilter.dat
Download Service	WARNING	Download service default location does not exist. Load default
Download Service	WARNING	Download service default torrent location does not exist. Load default
Groups	NOTICE	Add new group %s.
Groups	NOTICE	Delete group %s.
Network	NOTICE	%s is active because of changing Port Group. Enable DHCP client.
Network	NOTICE	%s is inactive because of changing Port Group. Disable DHCP client.
Network	NOTICE	%s MTU > (%s MTU - 8), %s may not work correctly.
Network	NOTICE	(%s MTU - 8) < %s MTU, %s may not work correctly.
Network	NOTICE	Add interface %s.

Table 62 Log Messages (continued)

CLASS	SEVERITY	MESSAGE
Network	NOTICE	Because %s link down. Default route will not apply until %s link up.
Network	NOTICE	Because base interface %s will be disabled.Interface %s is disabled now., base_ud_iface
Network	NOTICE	Network Config setting is changed
Network	NOTICE	Interface %s was disabled.
Network	NOTICE	Interface %s was enabled.
Network	NOTICE	Port Group on %s is changed. Renew DHCP client.
Network - PPPoE	NOTICE	Account pppoe was changed
Network - PPPoE	NOTICE	Add account pppoe
Network - PPPoE	NOTICE	ADD interface ppp0
Network - PPPoE	NOTICE	Interface ppp0 will reapply because Device-Ha become active status.
Network - PPPoE	NOTICE	Interface ppp0 will reapply because Device-Ha is not running.
Network - PPPoE	NOTICE	Network port is disabled
Network - PPPoE	NOTICE	Network port is enabled
Services	INFO	admin has changed the password
Services	INFO	HTTP management port has changed to %s
Services	INFO	Clock timezone is set to GMT%s
Services	INFO	Clock timezone is set to default
Services	INFO	Clock daylight saving is enabled
Services	INFO	Clock daylight saving is disabled
Services	INFO	Clock has disable daylight saving
Services	INFO	MyClock has enable daylight saving
Services	INFO	MyClock has set timezone to %s
Services	INFO	MyClock has set timezone to default
Services	INFO	The date and time are updated from NTP server.
Services	INFO	The date and time are updated manually.
Services	INFO	The time is updated manually.
Services	NOTICE	FTP server stops
Services	NOTICE	FTP server starts
Services	NOTICE	MyClock has changed daylight saving interval
Services	NOTICE	MyClock has disabled daylight saving interval
Services	NOTICE	NTP server has set to '%s'
Services	NOTICE	NTP server has set to null

Table 62 Log Messages (continued)

CLASS	SEVERITY	MESSAGE
Services	NOTICE	The NTP service is disabled.
Services	NOTICE	The NTP service is enabled.
Services	WARNING	Reaching Maximum Allowed Rules
Services	WARNING	Reaching Maximum Allowed Rules
Services	WARNING	Rule is empty
Services	WARNING	The Rule Does Not Exist
Shares	INFO	Expire recycle-bin finish for share %s, process time: %s seconds, remove %s file (%s bytes)
Shares	NOTICE	Add new disabled share %s for unshared folder: %s in volume: %s.
Shares	NOTICE	Add new share %s.
Shares	NOTICE	Delete share %s.
Shares	NOTICE	Purge all files in recycle-bin folder in share: %s.
Shares	NOTICE	Recycle-bin disabled. Remove recycle-bin folder in share: %s.
Storage - DISK	ERROR	Add %s to Jbod: FAILED
Storage - DISK	ERROR	Eject External Disk (%s): FAILED
Storage - DISK	INFO	Add %s to Jbod: SUCCESS
Storage - DISK	INFO	Eject External Disk (%s): SUCCESS
Storage - RAID	ERROR	Relabel Raid to [%s]: FAILED
Storage - RAID	ERROR	Start Repairing Degraded Raid by disk%s: FAILED
Storage - RAID	INFO	Relabel Raid to [%s]: SUCCESS
Storage - RAID	INFO	Start Repairing Degraded Raid by disk%s: SUCCESS
Storage - RAID	NOTICE	Auto Repair Degraded RAID by disk%s.
Storage - RAID	NOTICE	There is a RAID Degraded.
Storage - Volume	ERROR	Cancel External Volume Scan: FAILED
Storage - Volume	ERROR	Cancel Internal Volume Scan: FAILED
Storage - Volume	ERROR	Cannot Unmount Volume and RAID. System Busy Using Volume and RAID: Please Reboot and Try Again
Storage - Volume	ERROR	Create External Normal Volume [%s] (%s): FAILED

Table 62 Log Messages (continued)

CLASS	SEVERITY	MESSAGE
Storage - Volume	ERROR	Create Internal Volume [%s] (%s): FAILED
Storage - Volume	ERROR	Rename External Volume to [%s]: FAILED
Storage - Volume	ERROR	Scan External Volume: FAILED
Storage - Volume	ERROR	Scan Internal Volume (%s operation): FAILED
Storage - Volume	INFO	Cancel External Volume Scan: SUCCESS
Storage - Volume	INFO	Cancel Internal Volume Scan: SUCCESS
Storage - Volume	INFO	Create External Normal Volume [%s] (%s): SUCCESS
Storage - Volume	INFO	Create Internal Volume [%s] (%s): SUCCESS
Storage - Volume	INFO	Rename External Volume to [%s]: SUCCESS
Storage - Volume	INFO	Scan External Volume: SUCCESS
Storage - Volume	INFO	Scan Internal Volume (%s operation): SUCCESS
System	INFO	NTP update failed
System	INFO	NTP updates successfully from %s
System	INFO	NTP fails to update from %s
System	INFO	Device is rebooted by administrator!
System	INFO	Device is shutdown by administrator!
System	NOTICE	DNS server is changed.
System	NOTICE	Hostname is cleared.
System	NOTICE	Hostname is set to '%s'.
System	NOTICE	System description is changed.
System	NOTICE	System description is empty now.
System	NOTICE	DNS server setting is changed
System	NOTICE	DNS server address is changed to be given from DHCP server
System	NOTICE	DNS server setting is changed
System	NOTICE	DNS server address is changed to be assigned by user
System	NOTICE	Name server is changed.
USB	NOTICE	An external APC UPS device is plugged/unplugged.
USB	NOTICE	An external Mass Storage device is plugged/unplugged.
USB	NOTICE	An external Printer device is plugged/unplugged.
USB	NOTICE	An external USB hub device is plugged/unplugged.

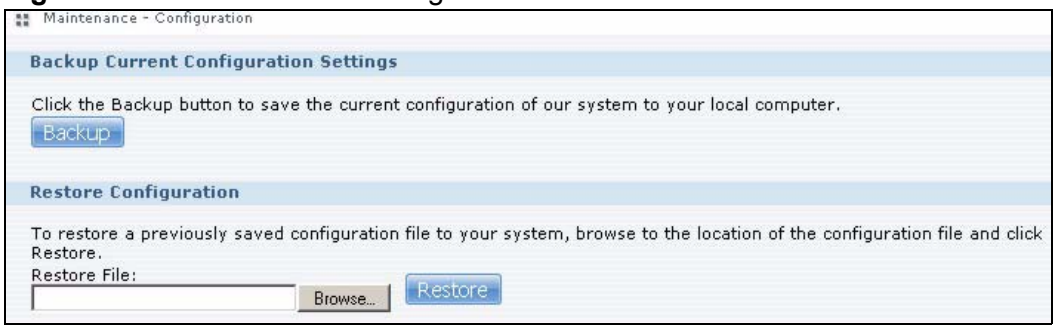
Table 62 Log Messages (continued)

CLASS	SEVERITY	MESSAGE
Users	ALERT	Failed %s login attempt (incorrect password or inexistent username)
Users	ALERT	Failed %s login attempt (incorrect password or inexistent username)
Users	INFO	User %s has logged in from %s!
Users	INFO	User %s has logged out from %s!
Users	INFO	User %s from %s has been logged out (re-auth timeout)!
Users	INFO	User %s from %s has been logged out (lease timeout)!
Users	NOTICE	Add new user %s by %s from %s.
Users	NOTICE	Change user %s's password.
Users	NOTICE	Delete user %s by %s from %s.
Users	NOTICE	The user %s from %s has attempted to change the user %s password but old password verification fail.
Users	NOTICE	User %s on %u.%u.%u.%u has been denied access from %s
Users	NOTICE	User %s password has been changed by %s from %s.

11.5 The Configuration Screen

Click **Maintenance** > **Configuration** to open the following screen. Use this screen to back up or restore the NSA configuration settings.

Figure 81 Maintenance > Configuration


Maintenance - Configuration
Backup Current Configuration Settings
Click the Backup button to save the current configuration of our system to your local computer.
Backup
Restore Configuration
To restore a previously saved configuration file to your system, browse to the location of the configuration file and click Restore.
Restore File:
Browse...
Restore

The following table describes the labels in this screen.

Table 63 Maintenance > Configuration

LABEL	DESCRIPTION
Backup Current Configuration Settings	
Backup	Click this to save the current configuration of the NSA to your computer. A pop-up screen appears asking you to confirm. Click **OK** to continue or **Cancel** to quit.

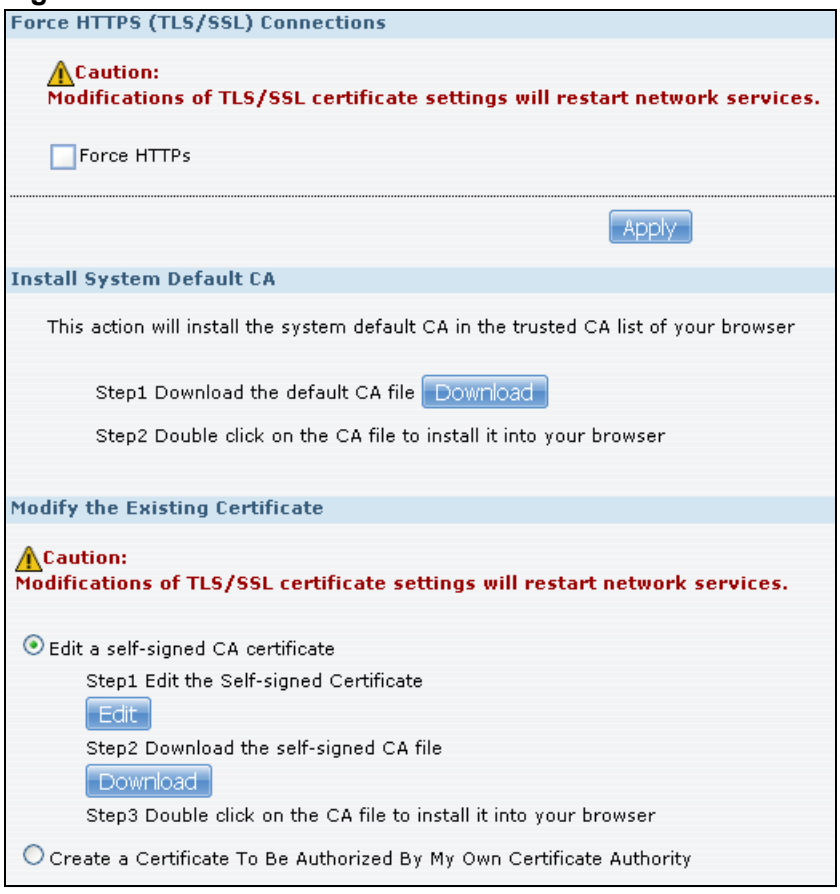
Table 63 Maintenance > Configuration

LABEL	DESCRIPTION
Restore Configuration	After you restore a configuration, if a share path does not exist, then it appears be in red.
Browse	Click this to locate a previously-saved configuration file.
Restore	Click this to load the previously-saved configuration file to the NSA. This replaces your current NSA configuration settings with the settings in the previously-saved configuration file. A pop-up screen appears asking you to confirm. Click **OK** to continue or **Cancel** to quit.

11.6 SSL

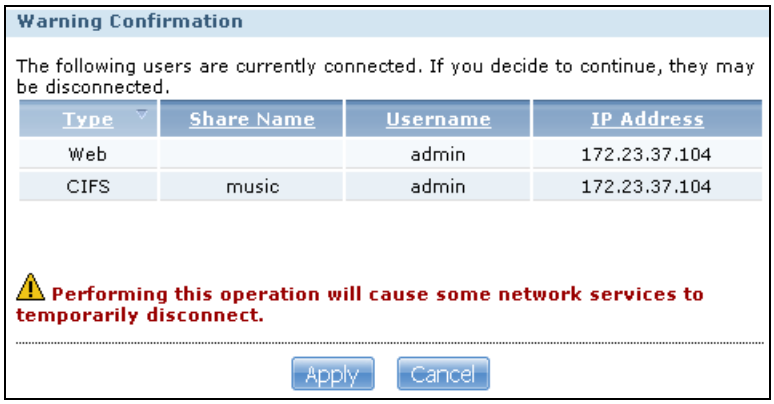
Click **Maintenance > SSL** to open this screen, where you can turn on HTTPS, create a public key certificate, or upload a public key certificate that was issued by a known certificate authority.

Figure 82 Maintenance > SSL


Force HTTPS (TLS/SSL) Connections
Caution:
Modifications of TLS/SSL certificate settings will restart network services.
Force HTTPs
Apply
Install System Default CA
This action will install the system default CA in the trusted CA list of your browser
Step1 Download the default CA file
Download
Step2 Double click on the CA file to install it into your browser
Modify the Existing Certificate
Caution:
Modifications of TLS/SSL certificate settings will restart network services.
Edit a self-signed CA certificate
Step1 Edit the Self-signed Certificate
Edit
Step2 Download the self-signed CA file
Download
Step3 Double click on the CA file to install it into your browser
Create a Certificate To Be Authorized By My Own Certificate Authority

The following table describes the labels in this screen.

Table 64 Maintenance > SSL

LABEL	DESCRIPTION
Force HTTPs	Select the **Force HTTPs** option to turn on the NSA's web browser security. Anyone who connects via HTTPS to the NSA must install the public key certificate associated with it. Note: The NSA will restart the web configurator after you click **Apply**. The NSA displays a warning screen if applying your change may disconnect some users. Click **Apply** if you want to continue. 
Install System Default CA	Click **Download** button to save a copy of the NSA's public key certificate to your local computer. This is useful for installing the certificate without having to connect to the NSA, or for sending by email to other users for them to install prior to logging into the NSA for the first time. After saving the certificate to your computer, double-click it to install it. Note: Each web browser handles certificate installation differently. See Appendix D on page 285 for more information.
Modify the Existing Certificate	Select **Edit a self-signed CA certificate**, then follow the on-screen instructions for creating a public key certificate signed by the NSA as the local certificate authority. Note: Use certificates created and signed by the NSA if the device is not open to external access. Select **Create a certificate authorized by other CA**, then follow the on-screen instructions to install a certificate that has been authorized by a third-party certificate authority. Note: Use this method if the device is open to external access, such as allowing users to connect through the Internet using FTP over TLS or HTTPs.

11.6.1 Modifying or Creating a Certificate

When you select the **Edit a self-signed CA certificate** option, then click the **Edit** button, a screen opens to allow you to make adjustments to the NSA's public key certificate.

The screen is also the same for the **Create a certificate authorized by other CA** option.

Figure 83 Maintenance > SSL > Create or Edit a Certificate

The following table describes the labels in this screen.

Table 65 Maintenance > SSL > Create or Edit a Certificate

LABEL	DESCRIPTION
Common Name	This name describes the certificate's origin, either in the form of an IP address or a domain name.
Host IP Address	Select this option and enter the NSA's IP address if you want to use this for the common name.
Host Domain Name	Select this option and enter the NSA's domain name if you want to use this for the common name
Organizational Unit (Optional)	Enter this name of the organizational unit which owns or maintains the NSA. This is an optional field.
Organization (Optional)	Enter this name of the organization or company which owns or maintains the NSA. This is an optional field.
Country (Optional)	Enter this name of the country in which the NSA is located. This is an optional field.
Key Type	Select the certificate's key type, either **RSA** or **DSA**.RSA is a public-key encryption and digital signature algorithm, while DSA is only a digital signature algorithm.
Key Length	Select the encryption key length. The longer the key, the better the encryption security. The only drawback to having a long key is that the file encrypted with it swells in size as well.

Table 65 Maintenance > SSL > Create or Edit a Certificate

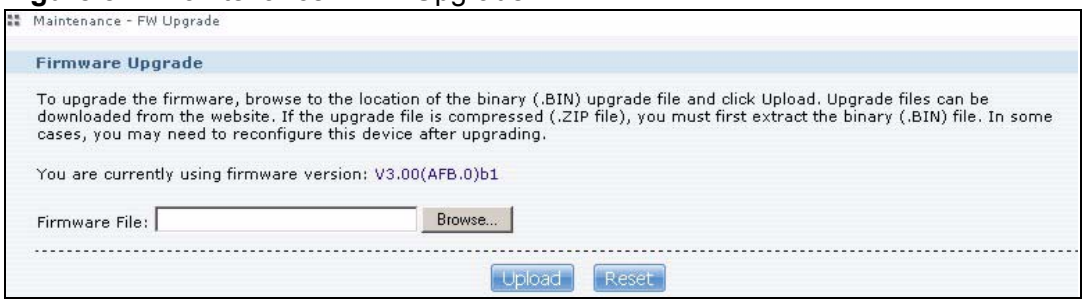
LABEL	DESCRIPTION
Apply	Click this to save your changes.
Cancel	Click this to discard changes and close the window.

11.7 The Firmware Upgrade Screen

Click **Maintenance > FW Upgrade** to open the following screen.

Use this screen to upgrade the NSA firmware. You should first have downloaded the latest firmware files from the ZyXEL website.

Figure 84 Maintenance > FW Upgrade


Maintenance - FW Upgrade
Firmware Upgrade
To upgrade the firmware, browse to the location of the binary (.BIN) upgrade file and click Upload. Upgrade files can be downloaded from the website. If the upgrade file is compressed (.ZIP file), you must first extract the binary (.BIN) file. In some cases, you may need to reconfigure this device after upgrading.
You are currently using firmware version: V3.00(AFB.0)b1
Firmware File:
Browse...
Upload
Reset

The following table describes the labels in this screen.

Table 66 Maintenance > FW Upgrade

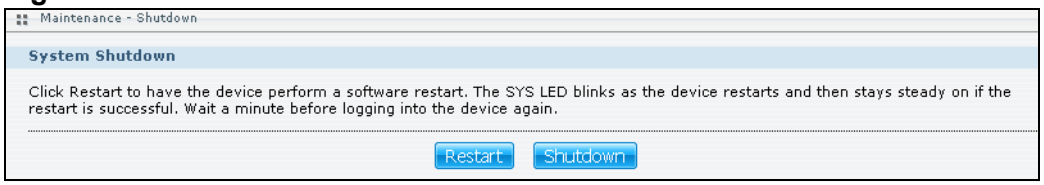
LABEL	DESCRIPTION
Firmware File	Type the location of the firmware file you want to upload
Browse	Click this to find the file on your computer
Upload	Click this to upload the new firmware. The NSA automatically restarts after you upgrade. Wait until the restart completes before accessing the NSA again. If you interrupt the upgrade, then the NSA may become unusable.
Reset	Click this to refresh the screen.

11.8 The Shutdown Screen

Click **Maintenance > Shutdown** to open the following screen.

Use this screen to turn off the NSA or perform a software restart. A software restart is faster than turning the NSA off and then turning it on again. Before shutting down or restarting, check the **System Status > Active Sessions** screen to make sure that no one is logged into the NSA or transferring files to or from the NSA.

Figure 85 Maintenance > Shutdown


Maintenance - Shutdown
System Shutdown
Click Restart to have the device perform a software restart. The SYS LED blinks as the device restarts and then stays steady on if the restart is successful. Wait a minute before logging into the device again.
Restart
Shutdown

The following table describes the labels in this screen.

Table 67 Maintenance > Shutdown

LABEL	DESCRIPTION
Restart	Click this to have the device perform a software restart.
Shutdown	Click this to shut down the system and restart it again later.

When you click the **Restart** button a pop-up screen will appear asking you to confirm. Click **OK** to continue or **Cancel** to quit the restart.

Figure 86 Maintenance > Shutdown > Confirm Restart

When you click the **Shutdown** button a pop-up screen will appear asking you to confirm. Click **OK** to continue or **Cancel** to quit the shutdown.

Figure 87 Maintenance > Shutdown > Confirm Shutdown

12

Protecting Your Data

12.1 Overview

This chapter compares the different ways of protecting data on the NSA and explains how to use backup management software included on the CD.

12.2 Protection Methods

There are a variety of ways to protect your data on the NSA. Below is a summary table of what can be done in each situation.

Table 68 Overview of Protection Methods

SITUATION	ACTION
Unexpected NSA behavior after configuration changes	Back up the NSA configuration file before you make major configuration changes.
Need to transfer data from your computer to the NSA after volume(s) have been created	Use the Memeo Autobackup program.
Data infected by virus	Use anti-virus software on your computer to scan files before saving them onto the NSA. Although this may be slow so you may want to schedule it to occur while no one is using the NSA. Use a firewall with anti-virus capability on your network.
Hard drive malfunction.	Use RAID.
NSA malfunction Network down Natural disaster such as a fire or earthquake occurs where your NSA is located	Back up data to another NSA or external USB hard drive.

The following sections describe these methods in more detail. See Section 5.6.3 on page 121 for more information on RAID.

12.2.1 Configuration File Backup and Restoration

Use the **Maintenance > Configuration** menus to create a file of your NSA configurations such as passwords, shares and volumes created, network settings and so on. If you're going to do some major configuration changes, then it is advisable to create a configuration backup file. If things go wrong after you make the configuration changes, you can always go back to the previous configuration by restoring an earlier configuration file.

If you forgot the NSA password, then use the **RESET** button (see Section 13.3.1 on page 234) to return the NSA to the factory default configuration.

Note: Configuration File Backup and Restoration does not affect data (your files and folders), volumes on the NSA.

12.2.2 Memeo Autobackup

Use the Memeo Autobackup software (included on the CD) on your computer to schedule and manage backups. You can backup from your computer to the NSA. You can also backup from one NSA on your network to another. You can set the Memeo Autobackup software to automatically back up files from your computer to the NSA whenever you modify the files.

Install the included DLNA-compliant Memeo Autobackup software on your Windows 2000 or later computers to let them browse and play files stored on the NSA.

See the Quick Start Guide for how to install the Memeo Autobackup software and the requirement details.

Note: The Memeo Autobackup program uses the same network port as the NDU to discover the NSA. To avoid a port conflict, do not run the Memeo Autobackup program at the same time as the NDU.

PART V
Troubleshooting and Specifications

Troubleshooting (231)

Product Specifications (245)

13

Troubleshooting

13.1 Troubleshooting Overview

This chapter offers some suggestions to solve problems you might encounter. The potential problems are divided into the following categories.

- Power, Hardware, Connections, and LEDs
- NSA Login and Access
- Reset the NSA
- I Cannot Access The NSA
- External USB Drives
- Media Server Functions
- Download Service and Broadcatching Functions
- Web Publishing
- Auto Upload

13.2 Power, Hardware, Connections, and LEDs

The NSA **PWR** LED does not turn on (no LEDs are on).

- Make sure the NSA is turned on.
- Make sure you are using the power adaptor or cord included with the NSA.
- Make sure the power adaptor or cord is connected to the NSA and plugged in to an appropriate power source. Make sure the power source is turned on.
- Turn the NSA off and on.
- If the problem continues, contact the vendor.

An **HDD** LED is off.

The **HDD** LED is off when the NSA cannot detect a hard drive in the drive bay. Replace or install a hard drive. See Installing or replacing a hard drive

An **HDD** LED is orange.

Orange means that the NSA detected an error on the hard drive (like a bad sector for example). The NSA automatically tries to recover a bad sector, but the LED stays orange until the NSA restarts. Even if the hard drive still functions, it is recommended that you replace it since errors are a sign that the hard drive may fail soon. See Installing or replacing a hard drive

An **HDD** LED is red.

Red means the hard drive has failed and the NSA can no longer detect it. Replace the hard drive. See Installing or replacing a hard drive If you are using a RAID I volume, you may still be able to use the volume but you should replace the faulty drive as soon as possible.

Installing or replacing a hard drive

Do not remove or install hard drives while the NSA is turned on. The NSA must be turned off before you remove or install hard drive(s).

1. Turn the NSA off, remove the rear panel and the drive tray and make sure:
   - there is a SATA I or SATA 3.0 Gbit/s compatible hard drive installed.
   - the hard drive is installed correctly in the drive tray. Push the tray back into NSA drive bay until the screw hole at the top of the drive tray is flush with the drive bay (see the NSA Quick Start Guide and Section 5.2.1 on page 112).
   - the hard drive could be faulty. Try a different hard drive or test the original hard drive in a different NSA or computer.
2. If you had to replace the drive, turn on the NSA and go to the **Storage** screen.

- If you have a RAID I volume click the **Repair** icon next to the new drive.
- If you are using RAID 0 you will need to recreate the whole volume. All of your data is lost.
- If you are using a single-disk JBOD volume, you need to create a new volume on the new drive.
- If you are using a two-disk JBOD volume, you need to create a whole new volume on both drives.

The LAN LED (by the **LAN** port) is off.

- Make sure the Ethernet cable is connected properly to the NSA and connected to another (Ethernet) device. Make sure the other device is turned on. If it's connected directly to a computer, make sure that the computer network card is working (ping 127.0.0.1 on the computer).
- Use another Ethernet cable. If you're connecting to a Gigabit Ethernet, make sure you're using an 8-wire Ethernet cable.
- If the problem continues, contact the vendor.

See Section 1.1.1 on page 23 for a description of NSA LEDs.

13.3 NSA Login and Access

I forgot the server name of the NSA.

- The default server name is **nsa220plus**.
- Use the NDU (NSA Discovery Utility) to discover your NSA. If you have admin privileges, you can directly change the IP address of the NSA using the NDU.
- If the server name has changed and you don't have the NDU, see Section 13.3.1 on page 234 to use the **RESET** button to return the default setting.

I cannot get to the NSA login screen.

- Use the NDU (NSA Discovery Utility) to discover your NSA. If you have admin privileges, you can directly change the IP address of the NSA using the NDU.
- If you used the **RESET** button, the NSA may have a new IP address. Close and reopen the NDU to discover the NSA.

- Make sure the NSA is turned on.
- If you are trying to login directly by typing the server name into your web browser's address field, make sure you are using the correct server name as the web site address.
  - The default server name is **nsa220plus**, if you have changed the server name, use the new one.
  - If the server name has been changed and you do not know the new server name, see the troubleshooting suggestions for I forgot the server name of the NSA.
  - If it still doesn't work, try using the NDU.
- Check the hardware connections, and make sure the LEDs are behaving as expected. See the Quick Start Guide and Section 1.1.1 on page 23.
- By default, the NSA gets an IP address automatically. The NSA assigns itself an IP address if no device assigns one. If your computer is also set to get an IP address automatically, the computer and the NSA can both assign themselves IP addresses and communicate. See Chapter 6 on page 125 if you need to configure the NSA with a static IP address.
- Make sure your computer's IP address is in the same subnet as the NSA's IP address. You can use the NDU to find the NSA's IP address. See Appendix A on page 255 for how to change your computer's IP address. Skip this if you know that there are routers between your computer and the NSA.
- Ping the NSA from your computer. Make sure your computer's Ethernet adapter is installed and functioning properly. In a (Windows) computer, click **Start**, (**All) Programs**, **Accessories** and then **Command Prompt**. In the **Command Prompt** window, type "ping" followed by the NSA's IP address (use the NDU to find the NSA's IP address if you don't know it) and then press [ENTER].
- Make sure you are using Internet Explorer 6.0 (and later) or Firefox 1.07 (and later).
- Make sure your Internet browser does not block pop-up windows and has JavaScripts and Java enabled. See Appendix B on page 271. With Internet Explorer 6, you may also have to enable scripting of safe ActiveX controls. See Section 13.3.2 on page 235.

13.3.1 Reset the NSA

If you forget your password or cannot access the web configurator, use the **RESET** button at the rear of the NSA. When you use the following reset procedure, the system name and admin password are returned to the factory defaults.

You may need to close and re-open the NDU to discover the NSA. This is because the NSA automatically re-acquires IP address information, so its IP address may change since. If no IP address information is assigned, the NSA uses Auto-IP to assign itself an IP address and subnet mask. For example, you could connect the NSA directly to your computer. If the computer is also set to get an IP address

automatically, the computer and the NSA will choose addresses for themselves and be able to communicate.

1 Press and hold the **RESET** button (for about two seconds) until you hear a beep, and then release it.

2 The NSA automatically restarts to complete the reset.

I forgot the password.

- The default password is **1234**.
- If you have changed the password and forgotten it, you will have to reset the NSA.

The NDU cannot discover my NSA.

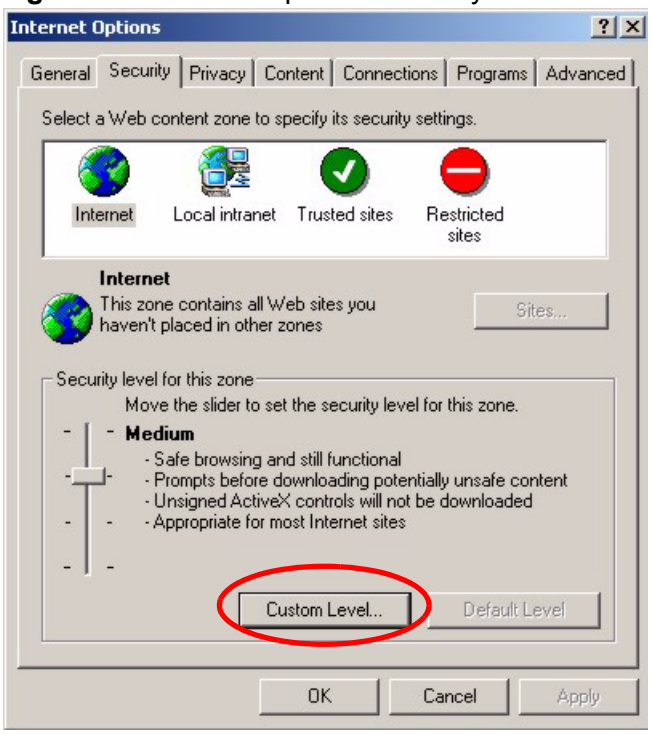
- Confirm that the computer running the NDU has a network connection. See the section on the NSA's LAN connection for related information.
- The computer running the NDU can only discover NSAs in the same subnet. NSAs connected to the same switch or router as your NDU computer are usually in the same subnet unless the router is doing subnetting or the switch is implementing VLAN.
- The Memeo Autobackup program uses the same network port as the NDU to discover the NSA. To avoid a port conflict, do not run the Memeo Autobackup program at the same time as the NDU.
- Close the NDU and reopen it.

13.3.2 Enabling Scripting of Safe ActiveX Controls

If pages of the web configurator do not display properly in Internet Explorer, check that scripting of safe ActiveX controls is enabled.

1 In Internet Explorer, click **Tools**, **Internet Options** and then the **Security** tab.

Figure 88 Internet Options: Security

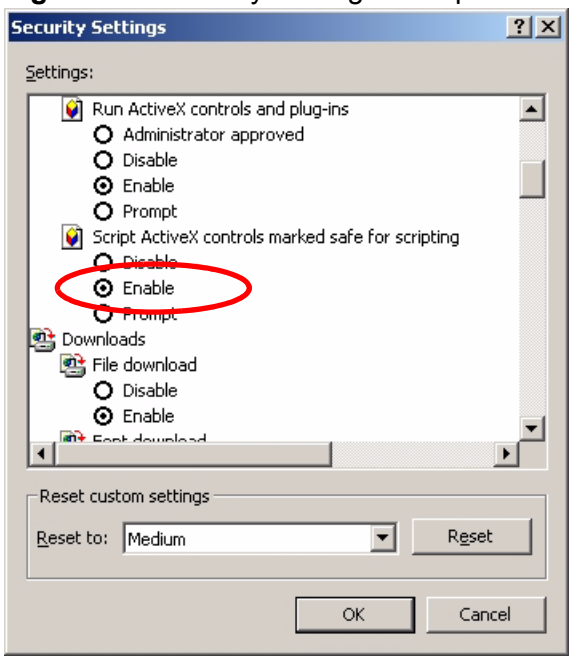


2 Click the **Custom Level...** button.

3 Under **Script ActiveX controls marked safe for scripting**, make sure that **Enable** is selected (the default).

4 Click **OK** to close the window.

Figure 89 Security Settings - Script Safe ActiveX Controls



I can see the login screen, but I cannot log in to the NSA.

- Make sure you have entered the username and password correctly. The default username is **admin**, and the default password is **1234**. These fields are case-sensitive, so make sure [Caps Lock] is not on.
- Turn the NSA off and on.
- If this does not work, see Section 13.3.1 on page 234 to reset the device.

I cannot see the multi-language web configurator screens while using Internet Explorer.

Use Section 13.3.2 on page 235 to enable the scripting of safe ActiveX controls.

13.4 I Cannot Access The NSA

I cannot access a share

- Check that the NSA is turned on and connected to the network. Try to ping the NSA or use the NDU to discover it.
- Check that you entered your login name and password correctly.
- Check that the share exists and check its access settings.
- Check if the shared folder is a subfolder of another (parent) share. Check that the parent share's access rights do not conflict with the subfolder share. It is recommended that you do not create subfolder shares.
- Check if there are any existing mapped network drives to the NSA. You may need to disconnect existing mapped network drives as a new mapped network drive connection may use (different) previously-saved login information. To do this, open Windows Explorer and click **Tools > Disconnect Mapped Network Drives**.
- Check that the volume in which the share resides, exists and is not down or degraded. If it is down or degraded, see Section 13.2 on page 231.
- Make sure you have the client for Microsoft networks installed and enabled in your network connection's properties.
  - In Windows XP or 2000, click **Start > Settings > Control Panel > Network Connections** (**Network and Dial-up Connections** in Windows 2000/NT) **> Local Area Connection > Properties**.
  - Check that **Client for Microsoft Networks** is in the list of components and has its check box selected.

13.5 External USB Drives

My external USB drive is read-only.

If your USB drive was formatted as NTFS, then it is read-only on the NSA (the volume status displays as **OK**). To solve this problem, re-format your USB drive using the NSA (or FAT or FAT32 using a computer). See Chapter 5 on page 111 for information on volume creation using the NSA (recommended). Back up the files on your computer before you format the USB drive.

The **COPY** LED is red.

Copying files from a USB device failed. The USB device may not be compatible with the NSA. Try save the files onto a computer and then from the computer to the NSA (through the network connection).

13.6 Some Features' Screens Do Not Display

Many NSA features require a valid internal volume.

Features like the print server, download service, broadcatching, FTP and Windows/CIFS access will not work without a valid internal volume. Make sure you have a volume on an internal disk and that the volume is in the healthy state.

- Install an internal disk if one is not installed yet or has failed. See the Quick Start Guide for how to install an internal disk.
- Create a new volume if you do not have one on the internal disk yet.
- Make sure the volume on the installed internal disk is in the healthy state.

13.7 Media Server Functions

I set the media server function to publish a folder, but some of the files in the folder do not display in the list on the media client.

Files with formats that are not supported on the media server may not display in the list. See Appendix on page 250 for the file formats that the media server supports.

I published a folder with the media server function, but the media client does not play some of the files (or does not play them properly).

1 Files with formats that are not supported on the media server may not display in the list. See Section 14.4 on page 250 for the file formats that the media server supports.

2 If you are using media client software, you may need to install codecs on your computer. Since the media client software uses your computer's installed codecs, files do not play if the required codec is not installed on your computer.

3 The media client may not support the file's format.

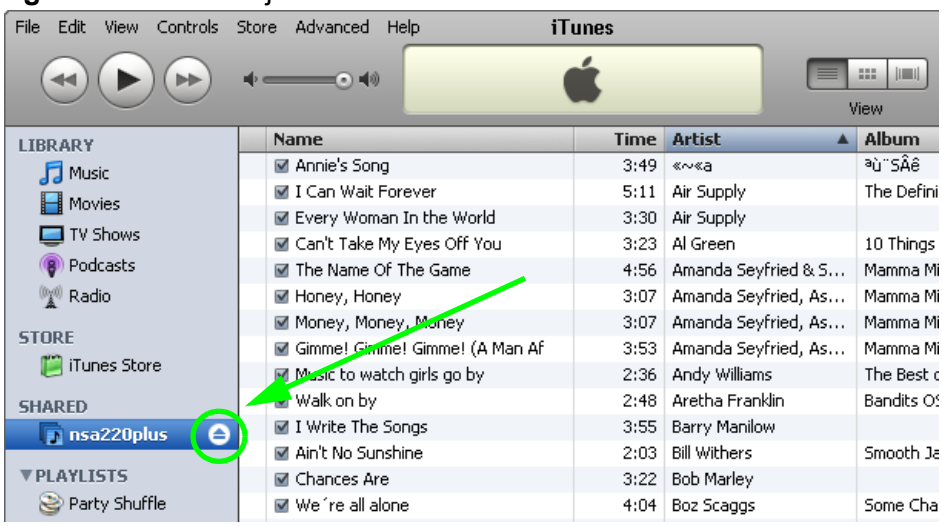
iTunes does not display the names of all the music or video files I just put on the NSA.

1 Make sure the files are a format supported by iTunes. See Section 14.5 on page 251.

2 Go to **Applications > Media Server**. Make sure the share containing the music and video files is published and the iTunes server option is enabled.

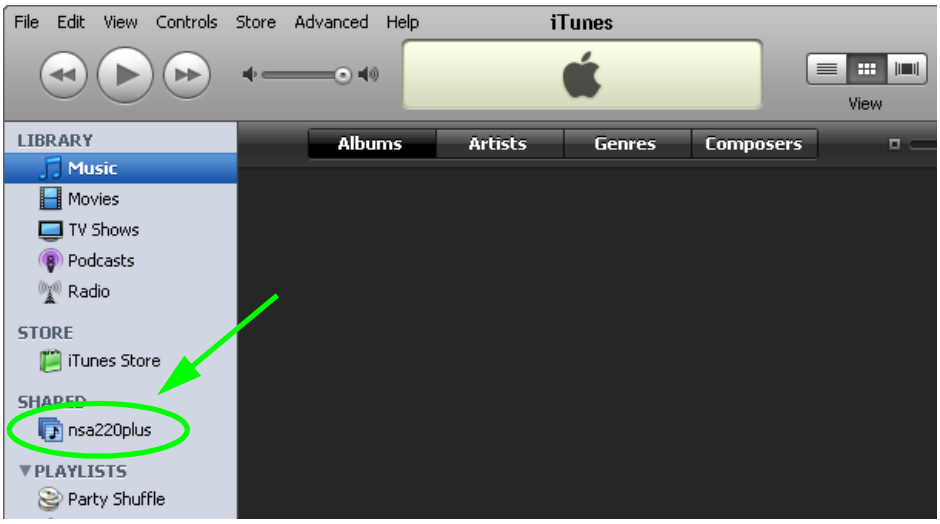
3 If an iTunes client is connected, the NSA's iTunes server function scans the published media server folders for files every three minutes. Leave iTunes connected to the NSA for three minutes. Then use the NSA's eject button (as shown next) to disconnect.

Figure 90 iTunes Eject Button



4 Then click the NSA's link to reconnect.

Figure 91 iTunes Reconnected



5 Another way to get the NSA's iTunes server function to scan the published media server folders for files is to go to **Applications > Media Server** and disable and re-enable the iTunes server option. If you uploaded many files, it may take awhile for the NSA to find and list all of them. Then try reconnecting your iTunes client.

I cannot use iTunes to play files located on my NSA.

1 Make sure the files are a format supported by iTunes. See Section 14.5 on page 251.

2 If you have files from the iTunes Store that use DRM, you need to use your Apple account ID and password to authorize other computers to play the files. Apple permits you to authorize up to five computers at a time. To authorize a computer, open iTunes and click **Store > Authorize Computer**.

3 If you are connecting through a NAT router, make sure that TCP port 3689 and UDP port 5353 are open for traffic on both the server and the client and all points in between (especially the NAT router). If your router includes a firewall, make sure it also allows TCP port 3689 and UDP port 5353 traffic.

13.8 Download Service and Broadcatching Functions

The download list or broadcatching items are missing after I removed a hard drive.

The NSA's download and broadcatching lists are stored on the system volume. If you have two JBOD volumes, it is possible to remove one and still use the other. However if you remove the system volume, you may lose the download and broadcasting lists. With two JBOD volumes, the hard disk that was installed first is usually the system volume.

13.9 Web Publishing

A web-published share cannot be accessed by web browser from the Internet.

- Make sure the person trying to access the share is using the correct web address (and port number if the NSA's web publishing feature is not using port 80). See page 156 for details.
- Make sure the publishing feature is turned on and the share is in the list of published shares.
- Make sure the person trying to access the share is using Internet Explorer 6.0 (and later) or Firefox 1.07 (and later).
- You need to use a public address to access the NSA's web-published shares from the Internet. If your NSA uses a private IP address, use the public IP address of your Internet gateway (firewall) and configure NAT or port forwarding on your Internet gateway and possibly firewall rules in order to let people access the NSA's web-published shares from the Internet.
- Make sure the firewall's public IP address is static or that the firewall uses a Dynamic Domain Name (DDNS).
- Web publishing uses TCP protocol and the port number you specify. Make sure there is not another service using TCP protocol with the same port number. See Appendix C on page 281 for a list of common services and their associated protocols and port numbers.

- If Firefox access to the share does not work, check that you did not set the Web publishing feature to use one of the following ports. (Firefox blocks these ports by default.)

Table 69 Ports Blocked By Default in Firefox

PORT	SERVICE
1	tcpmux
7	echo
9	discard
11	systat
13	daytime
15	netstat
17	qotd
19	chargen
20	ftp data
21	ftp control
22	ssh
23	telnet
25	smtp
37	time
42	name
43	nicname
53	domain
77	priv-rjs
79	finger
87	ttylink
95	supdup
101	hostriame
102	iso-tsap
103	gppitnp
104	acr-nema
109	POP2
110	POP3
111	sunrpc
113	auth
115	sftp
117	uucp-path
119	NNTP
123	NTP
135	loc-srv epmap
139	netbios
143	IMAP2
179	BGP
389	LDAP
465	SMTP+SSL
512	print exec
513	login
514	shell
515	printer
526	tempo
530	courier
531	chat
532	netnews
540	uucp
556	remotefs
563	NNTP+SSL
587	submission
601	syslog
636	LDAP+SSL
993	IMAP+SSL
995	POP3+SSL
2049	nfs
4045	lockd
6000	X11

- Make sure your ISP allows you to run a server and is not blocking the port number of the NSA's web publishing feature.

13.10 Auto Upload

The NSA does not automatically upload files to Flickr or YouTube.

1. Make sure the NSA is connected to the Internet. See Section 6.2.2 on page 127 for details about testing network connections.
2. Click **Maintenance** > **Log** to check the NSA's log for a message about the file.

2a If the log message displays "no such file or directory", the file may have been removed from the NSA. Make sure the file still exists in the watch folder.

2b If the log message displays "filename is queued", the file may still be waiting for auto upload. Check the grace period setting in the service's **Configuration** screen. You can set a smaller grace period to shorten the queue time.

2c If you cannot find any log messages about the file:

- Make sure the **Folder Watch List** includes the folder containing the file. You can upload the file to the watch folder again.
- Make sure the file's format is supported by Flickr or YouTube. You can find the supported file extensions in the **Folder Watch List**.

2d If the log message displays "not authorized yet", check if you can enter the NSA's **Configuration** screen for the service. If you changed the password of your Flickr or YouTube account, you cannot access the service's **Configuration** screen, and the NSA cannot auto upload files. Make sure you also update the account information in the NSA.

3 Make sure the file size does not exceed the limit imposed by the service. At the time of writing, Flickr restricts the file size to 10 MB, and YouTube restricts the file size to 100 MB.

4 Make sure you did not exceed the service's upload quota. Flickr and YouTube have different policies about how much you can upload within a certain period, for example, 100 MB/week.

5 The NSA may have temporarily failed to connect to the service. You can upload the file to the watch folder again.

14

Product Specifications

See also Chapter 1 on page 21 for a general overview of the key features.

14.1 Physical Features

These are the main external physical features.

Table 70 Physical Features

USB Ports	2 USB (version 2) ports. Copy files directly to the NSA from compatible USB devices like card readers, MP3 players, memory sticks, and digital cameras without using a computer. Expand the NSA's storage capacity with compatible USB devices (like hard drives).
Gigabit Ethernet Port	The 10/100/1000 Mbps auto-negotiating Ethernet port allows the NSA to detect the speed of incoming transmissions and adjust appropriately without manual intervention. It allows data transfer of either 100 Mbps or 1000 Mbps in either half-duplex or full-duplex mode depending on your Ethernet network. Use an 8-wire Ethernet cable for Gigabit connections. The port is also auto-crossover (MDI/MDI-X) meaning it automatically adjusts to either a crossover or straight-through Ethernet cable. Actual data throughput varies depending on the network conditions and environmental factors, including volume of network traffic, network overhead and building materials.
SATA Interface	Serial ATA is a low cost interface technology that allows high speed data transfer. Serial ATA also allows more efficient internal airflow and also smaller chassis design.
RESET Button	If you forget your (admin) password, then use the **RESET** button to restore the factory default password to "1234" (with username "admin"), and auto-IP address (DHCP client).

14.2 Firmware Features

These are some of the main firmware features of the NSA.

Table 71 Firmware Features

DLNA Server	The NSA is a DLNA-compliant media server that lets DLNA-compliant media clients play video, audio, and photo content files stored on the NSA.
RAID File Storage	Use RAID 0 if you want pure write speed and/or maximum capacity for your drives, and/or you have other means of protecting your data. Use RAID 1 if you have two drives and want to mirror primary data to the second drive. If one drive fails, replace it and then re-synchronize to recover all data.
User Passwords	Configure a password for an individual **User** to restrict access to the NSA.
Client Support	Data can be shared among all Windows, Mac, Linux, and UNIX users that have FTP client software or CIFS file sharing support (such as Samba for Linux and UNIX users). The NSA is also a DLNA-certified media server that lets DLNA-compliant media clients play video, audio, and photo content files stored on the NSA.
HTTP	Access the NSA using a regular web connection (HTTP).
DHCP (Dynamic Host Configuration Protocol)	DHCP (Dynamic Host Configuration Protocol) allows the NSA to obtain an IP address and subnet mask at start-up from a centralized DHCP server. Alternatively, you can give the NSA a static IP address and subnet mask.
Full Network Management	The embedded web configurator is an platform-independent web-based utility that allows you to easily access the NSA's management settings.
Hard Disk Drive Power Saving	If a hard disk inside the NSA is idle for six minutes, the NSA puts it to sleep until you use it again.
Firmware Upload and Configuration File Management	Upload new firmware to the NSA using the web configurator. You can also back up and restore the NSA configuration file containing all its settings to/from your computer.
NSA Discovery Utility (NDU)	Use the NDU from a Windows computer to find NSA(s) in your network, access the NSA login page, change its IP address configuration or map to a Windows network drive.
Memeo Autobackup	Memeo Autobackup is a tool for Windows users to create backups of data stored on their Windows computers to an NSA. This software is included on the CD.
Time and Date	Configure a time server and set a time zone for your NSA to show the correct times in logs.

14.3 Specification Tables

The NSA hardware specifications are shown in the following table.

Table 72 NSA Hardware Specifications

Default IP Address	DHCP client. If no DHCP server is found, the NSA uses Auto-IP to choose an IP address in the 169.254.X.X subnet (where X is a number from 1 to 254).
Default Subnet Mask	DHCP client by default. If no DHCP server is found, the subnet mask defaults to 255.255.255.0 (24 bits).
Default Username	admin
Default Password	1234
Dimensions	113 (D)*202 (W)*142 (H) mm
Weight	1.5 kg (without hard drives)
Drive Trays	Two
Compatible Hard Disks[A]	SATA I and SATA II 3.0 Gbit/s (Serial Advanced Technology Attachment) compatible hard drives.
Maximum Number of Folders Per Share	The NSA's media server function can detect up to 8,000 folders within a single published share. After 8,000 folders have been created, new folder contents will not be added to the media server's list. However you can still access the folders using Samba.
Ports	
Ethernet	One auto-negotiating, auto MDI/MDI-X 10/100/1000[B] Mbps RJ-45 Ethernet port (1000BASE-T)
USB v2.0 Storage	Two ports on front panel. Windows: NTFS (read only), FAT32 and FAT16 Linux: ReiserFS, EXT2, and EXT3
LEDs	PWR, SYS, HDD1, HDD2, COPY, and LAN
Operating Temperature	0º C ~ 40º C
AC Input	Voltage: 100 - 240 V at 50 - 60 Hz Current: 3.42 A
Storage Temperature	-30º C ~ 60º C
Operating Humidity	20% ~ 90% RH (non-condensing)
Storage Humidity	20% ~ 90% RH (non-condensing)
Certifications	EMC: FCC Part15B, VCCI, BSMI, EN55022, EN55024 Safety: CSA International, EN60950-1

A. Hard drives may not be included with your NSA.

B. Use an 8-wire Ethernet cable for Gigabit connections.

The NSA firmware specifications are shown in the following table

Table 73 NSA Firmware Specifications

File Storage System	JBOD, RAID 0, 1,
Network Protocols	TCP/IP, UDP/IP DHCP Client FTP HTTP
File Management	Create/Delete System Volume
Network File Sharing Protocol	CIFS/SMB for Windows and Mac OSX HTTP for web browser FTP
Network Security	Authentication Share level
Supported Clients	Windows 2000 Professional/Server Windows XP Home/Professional Windows Server 2003 Windows Vista Linux
Maximum Number of Users Allowed	100[A]
Maximum Number of Concurrent FTP Sessions	20[A]
Maximum Number of Concurrent CIFS Sessions	20[A]
System Management	Remote Management via Web Configurator (HTTP) NSA Discovery Utility (NDU)
Logging/Monitoring	Centralized Logs
Firmware Upgrade	Web Configurator
Web Browsers Supported	Internet Explorer 6.0 and later versions. Firefox 1.07 and later versions. Netscape Navigator 7.0 and later versions.

A. Limits may vary depending on user-share resource usage.

The following list, which is not exhaustive, illustrates the standards and recommendations supported in the NSA.

Table 74 Supported Standards and Recommendations

CSS level 1	Cascading Style Sheets.
CSS level 2 revision 1 (“CSS 2.1”)	Cascading Style Sheets.

Table 74 Supported Standards and Recommendations

DATETIME	"Date and Time Formats", W3C (World Wide Web Consortium) Note, M. Wolf and C. Wicksteed, 15 September 1997. Revised 27 August 1998. See http://www.w3.org/TR/1998/NOTE-datetime-19980827
DLNA v1.5 Server	The DLNA (Digital Living Network Alliance) group of companies works to make products compatible and able to work in a home network in order to make digital living easy and seamless. DLNA clients play files stored on DLNA servers.
ECMA-262	The original ECMAScript standard, also known as JavaScript.
ECMA-262 Edition 2	The ECMAScript standard's second revision; also ISO standard 16262.
ECMA-262 Edition 3	The ECMAScript standard's third revision; corresponds to JavaScript 1.5.
ECMA-357	ECMAScript for XML (E4X). See also the E4X errata.
HTML 3.2 Reference Specification	The HyperText Markup Language (HTML).
HTML 4.01 Specification	Defines the HyperText Markup Language (HTML), the publishing language of the World Wide Web.
ISO 3166-1	Country names (official short names in English) in alphabetical order as given in ISO 3166-1 and the corresponding ISO 3166-1-alpha-2 code elements.
ISO 639-2	Two-letter and three-letter language code sets.
MIMETYPES	IANA registered content types (MIME types). See the IANA web site (ftp://ftp.isi.edu/in-notes/iana/assignments/media-types/).
ISO 15740	Picture Transfer Protocol (PTP) from the International imaging Industry Association allows you to transfer pictures from digital cameras or other devices without needing additional device drivers.
RFC 1001	(STD-19) - Protocol standard for NetBIOS service on a TCP/UDP transport: Concepts and methods
RFC 1002	(STD-19) - Protocol standard for NetBIOS service on a TCP/UDP transport: Detailed specifications
RFC 1034	(STD-13) - Domain names - concepts and facilities
RFC 1035	(STD-13) - Domain names - implementation and specification
RFC 1305	Network Time Protocol (NTP version 3)
RFC 1415	FTP-FTAM Gateway Specification
RFC 1510	The Kerberos Network Authentication Service (V5)
RFC 1738	Uniform Resource Locators (URL)
RFC 1808	Relative Uniform Resource Locators
RFC 1945	The Hypertext Transfer Protocol (HTTP) 1.0.
RFC 2131	Dynamic Host Configuration Protocol
RFC 2396	Uniform Resource Identifier (URI)
RFC 2396	Uniform Resource Identifiers (URI): Generic Syntax
RFC 2616	Hypertext Transfer Protocol (HTTP) 1.1.

Table 74 Supported Standards and Recommendations

RFC 2854	History of HTML development, and lists the relevant W3C (World Wide Web Consortium) recommendations for the "text/html" MIME type.
RFC 3066, BCP 47 (Best Current Practice)	Language tags
RFC 3282	"Content-language:" headers.
RFC 3986	(STD-66) - Uniform Resource Identifier (URI): Generic Syntax
RFC 4120	The Kerberos Network Authentication Service (V5)
RFC 4248	The telnet URI Scheme
RFC 793	(STD-7) - Transmission Control Protocol
RFC 959	(STD-9) - File Transfer Protocol
SATA	SATA I and SATA II 3.0 Gbit/s (Serial Advanced Technology Attachment) compatible hard drives.
UPnP	Universal Plug and Play (UPnP) is a distributed, open networking standard that uses TCP/IP for simple peer-to-peer network connectivity between devices.
USB 2.0	USB (Universal Serial Bus) version 2.0 allows for interfacing devices with data transfers rates of up to 480 Mbps.
XHTML 1.0	Extensible HyperText Markup Language (Second Edition)
XHTML 1.1	Module-based XHTML

14.4 Supported Media Server Content Formats

The following describes the details about the files that the NSA media server can publish.

Table 75 Supported Media Server Content Formats

CATEGORY	FILE TYPE	EXTENSION
Video	MPEG-1/MPEG-2	dat, m1v, m2t, m2v, m4v, mp2, mp2t, mp2p, mpa, mpe, mpeg, mpeg2, mpg, mpg2, vob
	Windows Media Video	asf, wmv
	AVI	avi
	DivX	divx , avi
	DVR-MS	dvr-ms
	Matroska	mkv
	Quick Time Video	mov

Table 75 Supported Media Server Content Formats

CATEGORY	FILE TYPE	EXTENSION
Music	MP3	mp3
	MPEG-4	3g2, 3gp, aac, m4a, mp4
	Ogg Vorbis	ogg
	WAVE	wav
	Windows Media Audio	wma
	M3U (Playlist)	m3u
	PLS (Playlist)	pls
	Matroska	mka
	Text to Speech	tts
	Human Voice Band	lpcm, pcm
Photo	Bitmap	bmp
	JPEG	jpeg, jpg
	PNG	png

Note: Not all published file types can be viewed by all client applications.

14.5 Supported iTunes Server Content Formats

At the time of writing, the NSA's supports iTunes 7.4.1.2, publishing AAC (MPEG-4), MP3, AIFF, WAV, and Apple Lossless files.

14.6 Power Consumption

The NSA was tested using the specified power sources with the external power adapter and with two hard drives installed.

Note: This table is a laboratory test of NSA power consumption for your reference only.

Table 76 Power Consumption in Watts (W)

POWER SOURCE	SYSTEM READ/ WRITE	SYSTEM IDLE
240V/50Hz	25.2W	11.9W
100V/60Hz	23.6W	11.7W

PART VI
Appendices and Index

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A

Setting up Your Computer's IP Address

All computers must have a 10M or 100M Ethernet adapter card and TCP/IP installed.

Windows 95/98/Me/NT/2000/XP, Macintosh OS 7 and later operating systems and all versions of UNIX/LINUX include the software components you need to install and use TCP/IP on your computer. Windows 3.1 requires the purchase of a third-party TCP/IP application package.

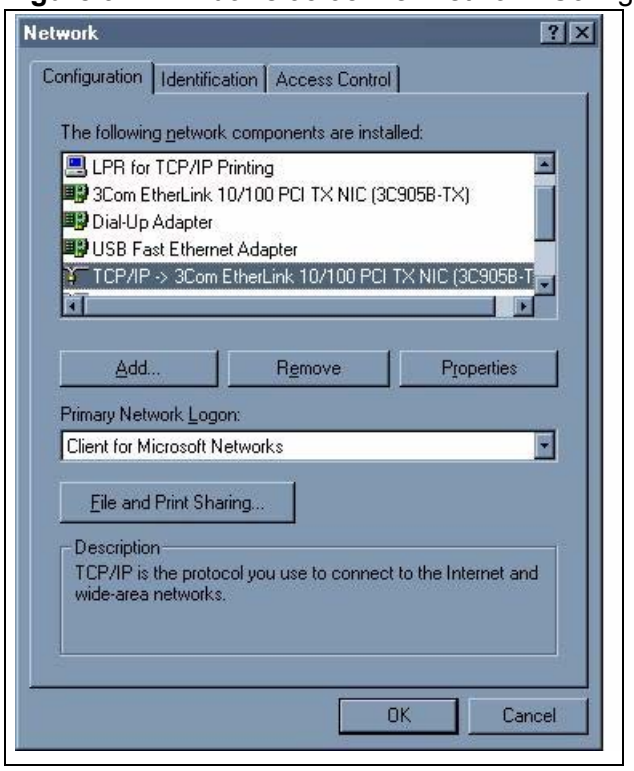
TCP/IP should already be installed on computers using Windows NT/2000/XP, Macintosh OS 7 and later operating systems.

After the appropriate TCP/IP components are installed, configure the TCP/IP settings in order to "communicate" with your network.

Windows 95/98/Me

Click **Start**, **Settings**, **Control Panel** and double-click the **Network** icon to open the **Network** window.

Figure 92 WIndows 95/98/Me: Network: Configuration



Installing Components

The **Network** window **Configuration** tab displays a list of installed components. You need a network adapter, the TCP/IP protocol and Client for Microsoft Networks.

If you need the adapter:

1. In the **Network** window, click **Add**.
2. Select **Adapter** and then click **Add**.
3. Select the manufacturer and model of your network adapter and then click **OK**.

If you need TCP/IP:

1. In the **Network** window, click **Add**.
2. Select **Protocol** and then click **Add**.

3 Select **Microsoft** from the list of **manufacturers**.

4 Select **TCP/IP** from the list of network protocols and then click **OK**.

If you need Client for Microsoft Networks:

1 Click **Add**.

2 Select **Client** and then click **Add**.

3 Select **Microsoft** from the list of manufacturers.

4 Select **Client for Microsoft Networks** from the list of network clients and then click **OK**.

5 Restart your computer so the changes you made take effect.

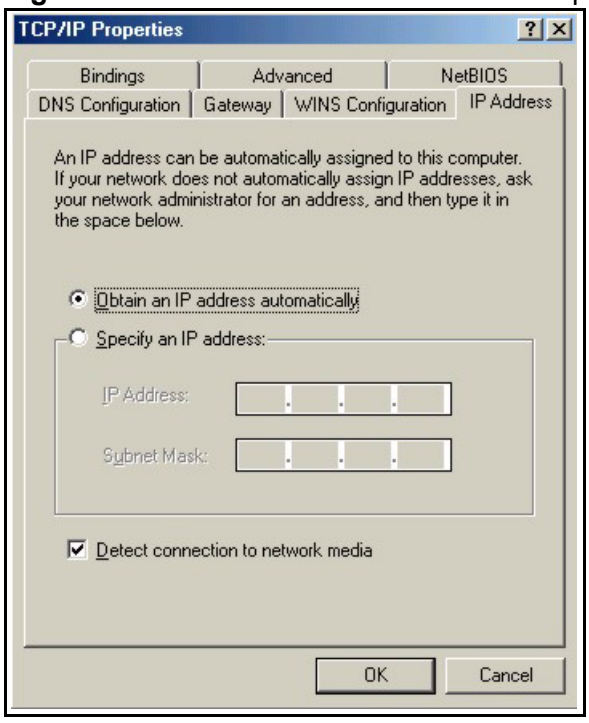
Configuring

1 In the **Network** window **Configuration** tab, select your network adapter's TCP/IP entry and click **Properties**

2 Click the **IP Address** tab.

- If your IP address is dynamic, select **Obtain an IP address automatically**.
- If you have a static IP address, select **Specify an IP address** and type your information into the **IP Address** and **Subnet Mask** fields.

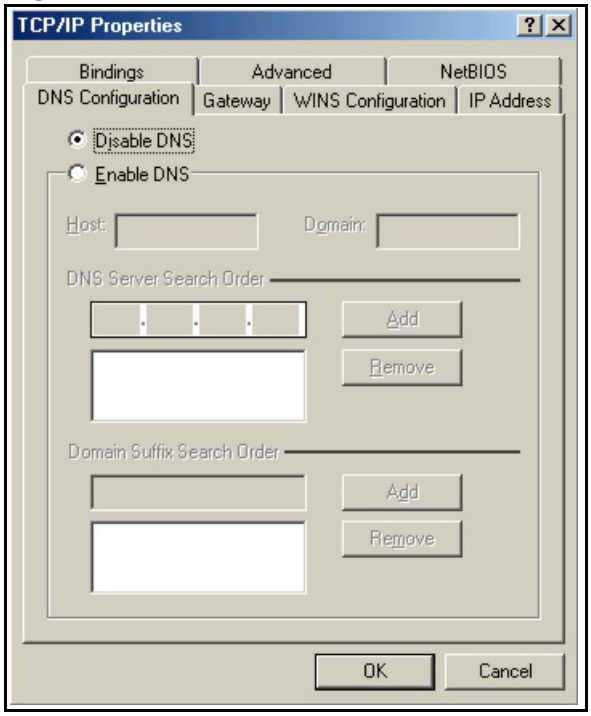
Figure 93 Windows 95/98/Me: TCP/IP Properties: IP Address


TCP/IP Properties
Bindings
Advanced
NetBIOS
DNS Configuration
Gateway
WINS Configuration
IP Address
An IP address can be automatically assigned to this computer. If your network does not automatically assign IP addresses, ask your network administrator for an address, and then type it in the space below.
Obtain an IP address automatically
Specify an IP address:
IP Address:
Subnet Mask:
Detect connection to network media
OK
Cancel

3 Click the **DNS** Configuration tab.

- If you do not know your DNS information, select **Disable DNS**.
- If you know your DNS information, select **Enable DNS** and type the information in the fields below (you may not need to fill them all in).

Figure 94 Windows 95/98/Me: TCP/IP Properties: DNS Configuration



4 Click the **Gateway** tab.

- If you do not know your gateway's IP address, remove previously installed gateways.
- If you have a gateway IP address, type it in the **New gateway field** and click **Add**.

5 Click **OK** to save and close the **TCP/IP Properties** window.

6 Click **OK** to close the **Network** window. Insert the Windows CD if prompted.

7 Restart your computer when prompted.

Verifying Settings

1 Click **Start** and then **Run**.

2 In the **Run** window, type "winipcfg" and then click **OK** to open the **IP Configuration** window.

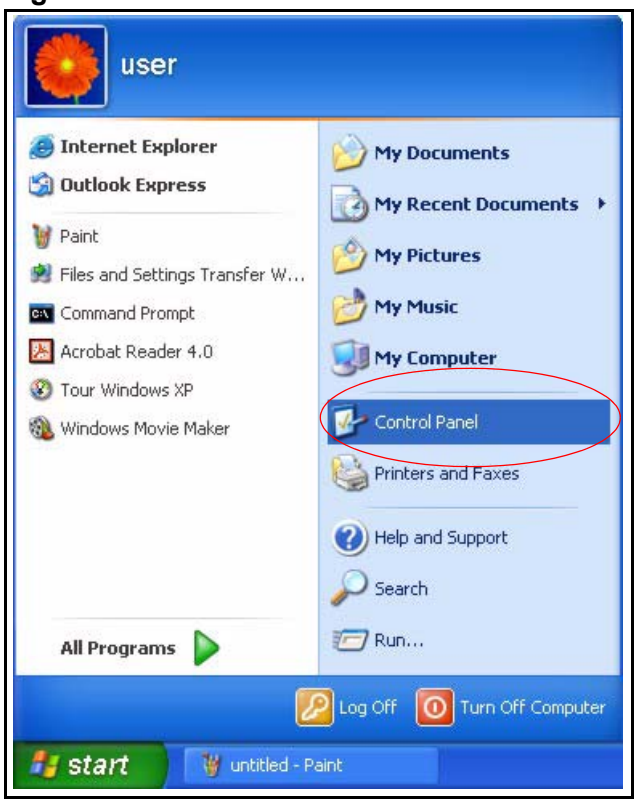
3 Select your network adapter. You should see your computer's IP address, subnet mask and default gateway.

Windows 2000/NT/XP

The following example figures use the default Windows XP GUI theme.

1 Click **start** (**Start** in Windows 2000/NT), **Settings**, **Control Panel**.

Figure 95 Windows XP: Start Menu

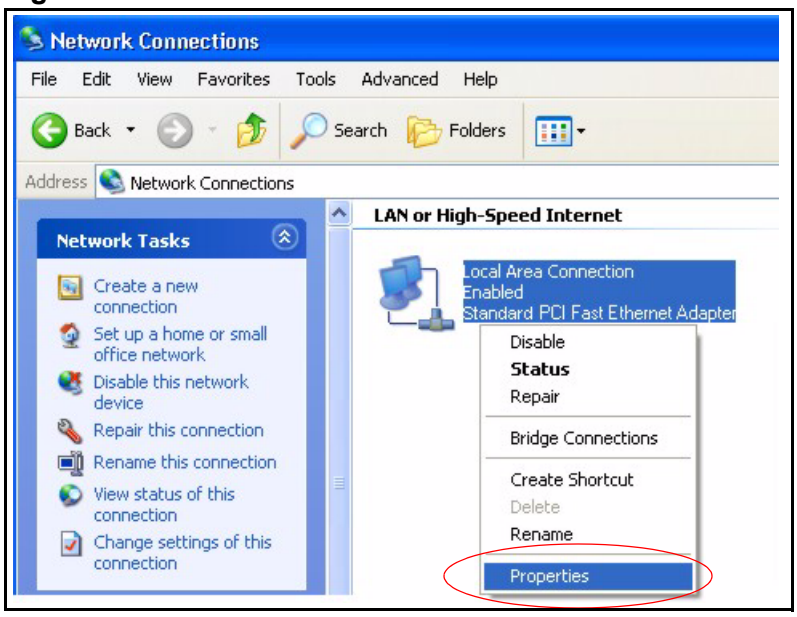


2 In the **Control Panel**, double-click **Network Connections** (**Network and Dial-up Connections** in Windows 2000/NT).

Figure 96 Windows XP: Control Panel

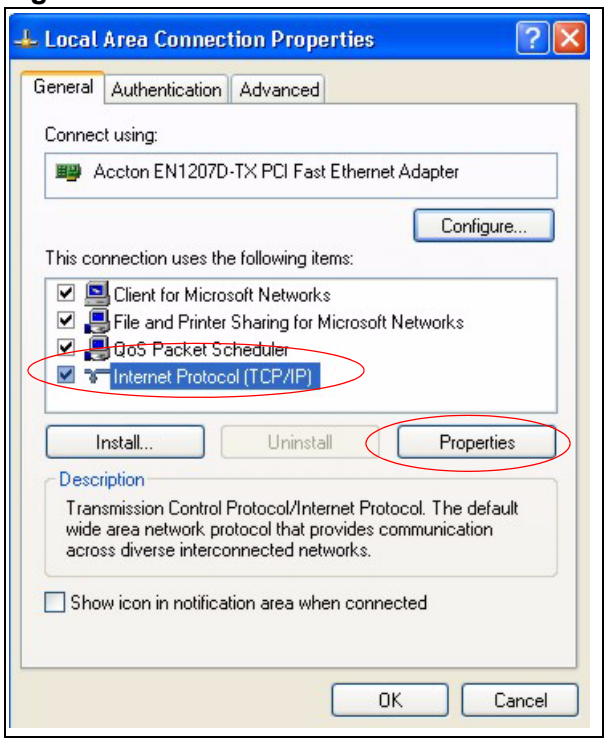
3 Right-click **Local Area Connection** and then click **Properties**.

Figure 97 Windows XP: Control Panel: Network Connections: Properties



4 Select **Internet Protocol (TCP/IP)** (under the **General** tab in Win XP) and then click **Properties**.

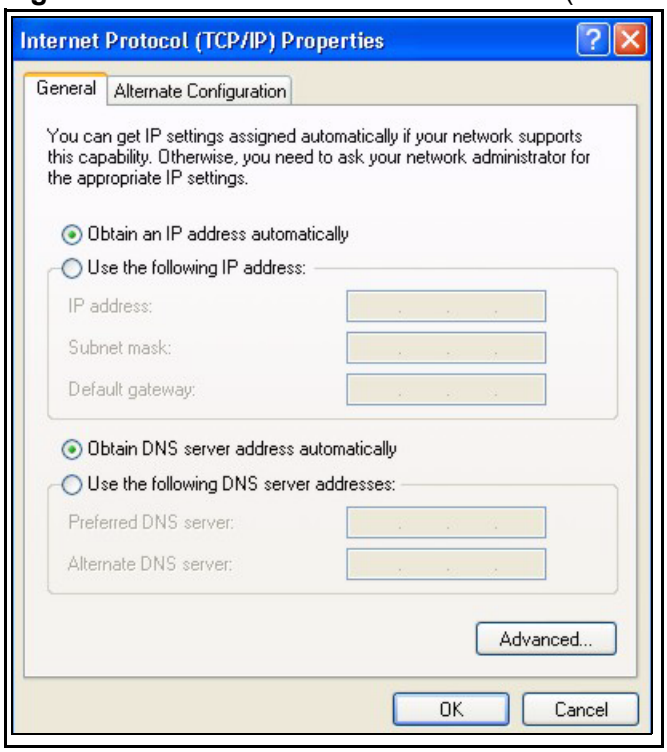
Figure 98 Windows XP: Local Area Connection Properties



5 The **Internet Protocol TCP/IP Properties** window opens (the **General tab** in Windows XP).

- If you have a dynamic IP address click **Obtain an IP address automatically**.
- If you have a static IP address click **Use the following IP Address** and fill in the **IP address**, **Subnet mask**, and **Default gateway** fields.
- Click **Advanced**.

Figure 99 Windows XP: Internet Protocol (TCP/IP) Properties


Internet Protocol (TCP/IP) Properties
General
Alternate Configuration
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
Subnet mask:
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

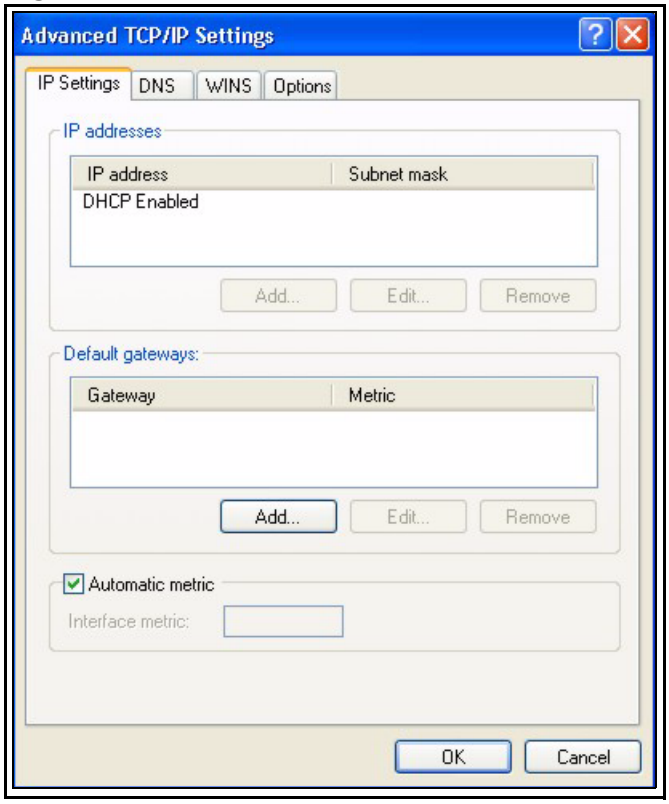
6 If you do not know your gateway's IP address, remove any previously installed gateways in the **IP Settings** tab and click **OK**.

Do one or more of the following if you want to configure additional IP addresses:

- In the **IP Settings** tab, in IP addresses, click **Add**.
- In **TCP/IP Address**, type an IP address in **IP address** and a subnet mask in **Subnet mask**, and then click **Add**.
- Repeat the above two steps for each IP address you want to add.
- Configure additional default gateways in the **IP Settings** tab by clicking **Add** in **Default gateways**.
- In **TCP/IP Gateway Address**, type the IP address of the default gateway in **Gateway**. To manually configure a default metric (the number of transmission hops), clear the **Automatic metric** check box and type a metric in **Metric**.
- Click **Add**.
- Repeat the previous three steps for each default gateway you want to add.

- Click **OK** when finished.

Figure 100 Windows XP: Advanced TCP/IP Properties

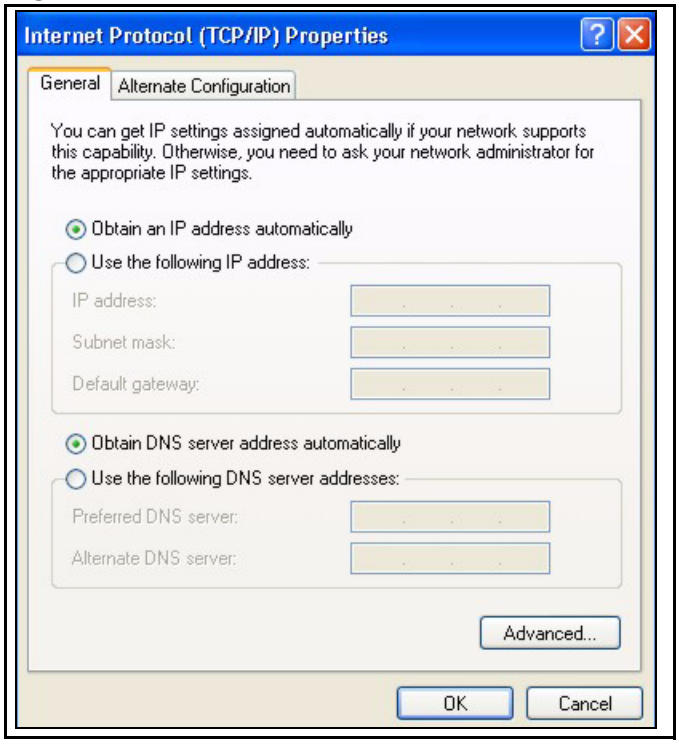


7 In the **Internet Protocol TCP/IP Properties** window (the **General** tab in Windows XP):

- Click **Obtain DNS server address automatically** if you do not know your DNS server IP address(es).
- If you know your DNS server IP address(es), click **Use the following DNS server addresses**, and type them in the **Preferred DNS server** and **Alternate DNS server** fields.

If you have previously configured DNS servers, click **Advanced** and then the **DNS** tab to order them.

Figure 101 Windows XP: Internet Protocol (TCP/IP) Properties


Internet Protocol (TCP/IP) Properties
General
Alternate Configuration
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
Subnet mask:
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

8 Click **OK** to close the **Internet Protocol (TCP/IP) Properties** window.

9 Click **Close** (**OK** in Windows 2000/NT) to close the **Local Area Connection Properties** window.

10 Close the **Network Connections** window (**Network and Dial-up Connections** in Windows 2000/NT).

11 Restart your computer (if prompted).

Verifying Settings

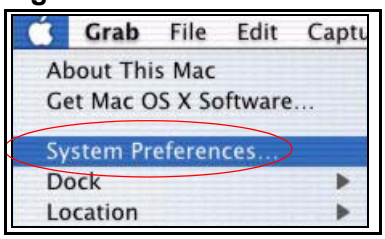
1 Click **Start**, **All Programs**, **Accessories** and then **Command Prompt**.

2 In the **Command Prompt** window, type "ipconfig" and then press [ENTER]. You can also open **Network Connections**, right-click a network connection, click **Status** and then click the **Support** tab.

Macintosh OS X

1 Click the **Apple** menu, and click **System Preferences** to open the **System Preferences** window.

Figure 102 Macintosh OS X: Apple Menu

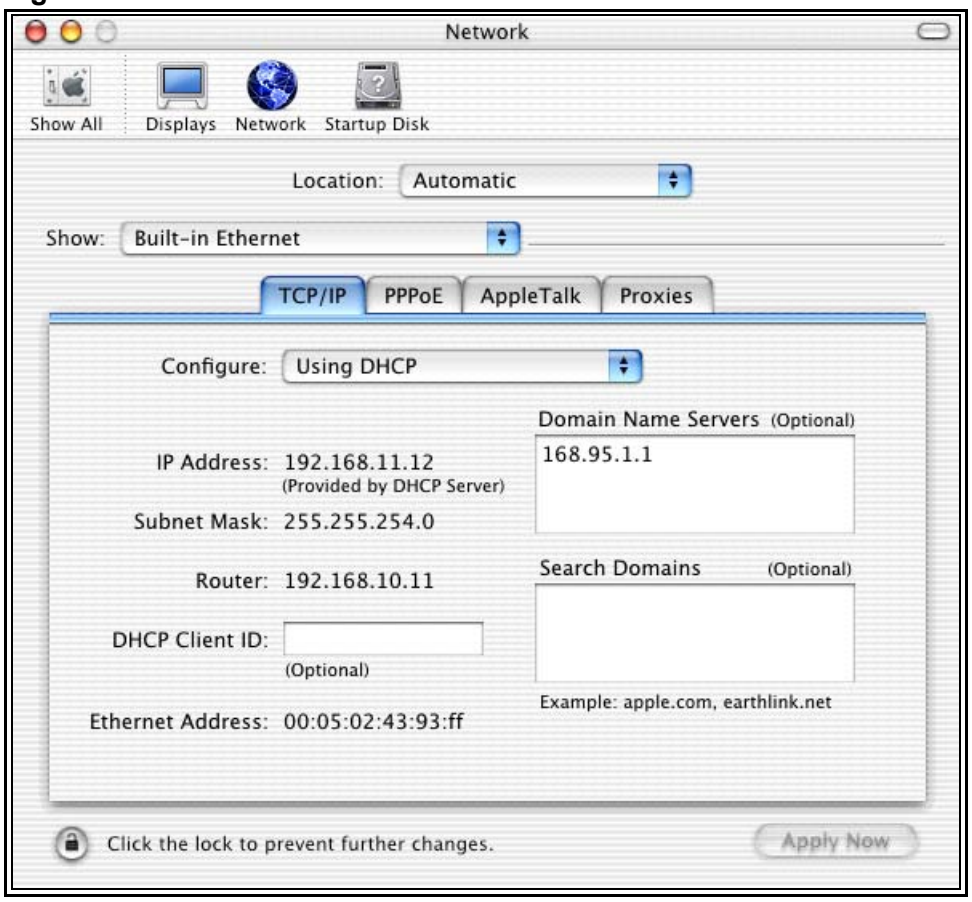


2 Click **Network** in the icon bar.

- Select **Automatic** from the **Location** list.
- Select **Built-in Ethernet** from the **Show** list.
- Click the **TCP/IP** tab.

3 For dynamically assigned settings, select **Using DHCP** from the **Configure** list.

Figure 103 Macintosh OS X: Network



4 For statically assigned settings, do the following:

- From the **Configure** box, select **Manually**.
- Type your IP address in the **IP Address** box.
- Type your subnet mask in the **Subnet mask** box.
- Type the IP address of your gateway in the **Router address** box.

5 Click **Apply Now** and close the window.

6 Restart your computer (if prompted).

Verifying Settings

Check your TCP/IP properties in the **Network** window.

Linux

This section shows you how to configure your computer's TCP/IP settings in Red Hat Linux 9.0. Procedure, screens and file location may vary depending on your Linux distribution and release version.

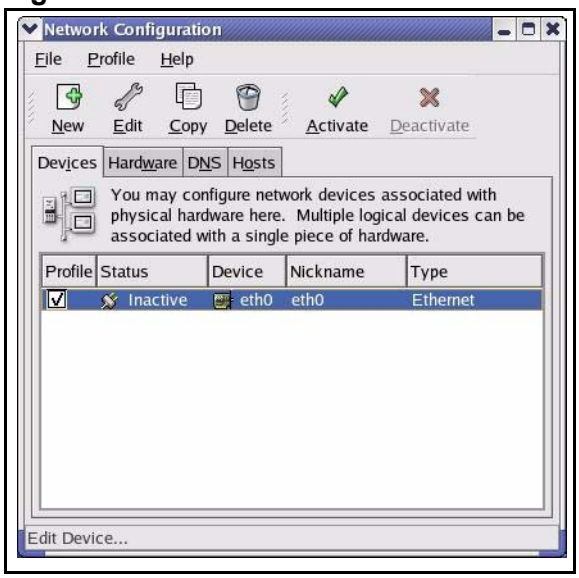
Note: Make sure you are logged in as the root administrator.

Using the K Desktop Environment (KDE)

Follow the steps below to configure your computer IP address using the KDE.

1 Click the Red Hat button (located on the bottom left corner), select **System Setting** and click **Network**.

Figure 104 Red Hat 9.0: KDE: Network Configuration: Devices



2 Double-click on the profile of the network card you wish to configure. The **Ethernet Device General** screen displays as shown.

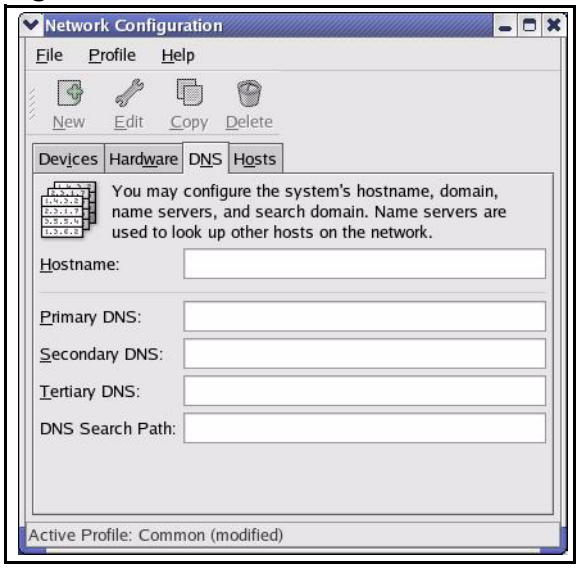
Figure 105 Red Hat 9.0: KDE: Ethernet Device: General

- If you have a dynamic IP address, click **Automatically obtain IP address settings with** and select **dhcp** from the drop down list.
- If you have a static IP address, click **Statically set IP Addresses** and fill in the **Address**, **Subnet mask**, and **Default Gateway Address** fields.

3 Click **OK** to save the changes and close the **Ethernet Device General** screen.

4 If you know your DNS server IP address(es), click the **DNS** tab in the **Network Configuration** screen. Enter the DNS server information in the fields provided.

Figure 106 Red Hat 9.0: KDE: Network Configuration: DNS



5 Click the **Devices** tab.

6 Click the **Activate** button to apply the changes. The following screen displays. Click **Yes to save the changes in all screens.**

Figure 107 Red Hat 9.0: KDE: Network Configuration: Activate

Question
redhat-config-network:
You have made some changes in your configuration.
To activate the network device eth0, the changes have to be saved.
Do you want to continue?
No
Yes

7 After the network card restart process is complete, make sure the **Status** is **Active** in the **Network Configuration** screen.

Using Configuration Files

Follow the steps below to edit the network configuration files and set your computer IP address.

1 Assuming that you have only one network card on the computer, locate the `ifconfig-eth0` configuration file (where `eth0` is the name of the Ethernet card). Open the configuration file with any plain text editor.

- If you have a dynamic IP address, enter **dhcp** in the `BOOTPROTO=` field. The following figure shows an example.

Figure 108 Red Hat 9.0: Dynamic IP Address Setting in ifconfig-eth0

```
DEVICE=eth0
ONBOOT=yes
BOOTPROTO=dhcp
USERCTL=no
PEERDNS=yes
TYPE=Ethernet
```

- If you have a static IP address, enter **static** in the BOOTPROTO= field. Type IPADDR= followed by the IP address (in dotted decimal notation) and type NETMASK= followed by the subnet mask. The following example shows an example where the static IP address is 192.168.1.10 and the subnet mask is 255.255.255.0.

Figure 109 Red Hat 9.0: Static IP Address Setting in ifconfig-eth0

```
DEVICE=eth0
ONBOOT=yes
BOOTPROTO=static
IPADDR=192.168.1.10
NETMASK=255.255.255.0
USERCTL=no
PEERDNS=yes
TYPE=Ethernet
```

2 If you know your DNS server IP address(es), enter the DNS server information in the `resolv.conf` file in the `/etc` directory. The following figure shows an example where two DNS server IP addresses are specified.

Figure 110 Red Hat 9.0: DNS Settings in resolv.conf

```
nameserver 172.23.5.1
nameserver 172.23.5.2
```

3 After you edit and save the configuration files, you must restart the network card. Enter `./network restart` in the `/etc/rc.d/init.d` directory. The following figure shows an example.

Figure 111 Red Hat 9.0: Restart Ethernet Card

```
[root@localhost init.d]# network restart

Shutting down interface eth0:                  [OK]
Shutting down loopback interface:              [OK]
Setting network parameters:                    [OK]
Bringing up loopback interface:                [OK]
Bringing up interface eth0:                    [OK]
```

Verifying Settings

Enter `ifconfig` in a terminal screen to check your TCP/IP properties.

Figure 112 Red Hat 9.0: Checking TCP/IP Properties

```
[root@localhost]# ifconfig
eth0      Link encap:Ethernet HWaddr 00:50:BA:72:5B:44
          inet addr:172.23.19.129 Bcast:172.23.19.255 Mask:255.255.255.0
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:717 errors:0 dropped:0 overruns:0 frame:0
          TX packets:13 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:100
          RX bytes:730412 (713.2 Kb) TX bytes:1570 (1.5 Kb)
          Interrupt:10 Base address:0x1000
[root@localhost]#
```

B

Pop-up Windows, JavaScripts and Java Permissions

In order to use the web configurator you need to allow:

- Web browser pop-up windows from your device.
- JavaScripts (enabled by default).
- Java permissions (enabled by default).

Note: Internet Explorer 6 screens are used here. Screens for other Internet Explorer versions may vary.

Internet Explorer Pop-up Blockers

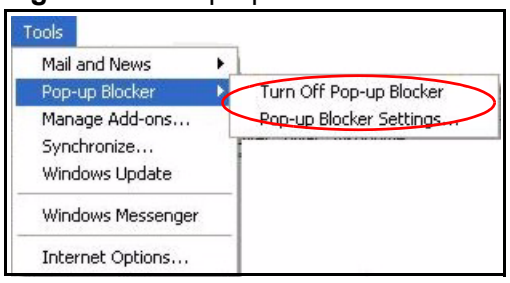
You may have to disable pop-up blocking to log into your device.

Either disable pop-up blocking (enabled by default in Windows XP SP (Service Pack) 2) or allow pop-up blocking and create an exception for your device's IP address.

Disable Pop-up Blockers

1 In Internet Explorer, select **Tools**, **Pop-up Blocker** and then select **Turn Off Pop-up Blocker**.

Figure 113 Pop-up Blocker

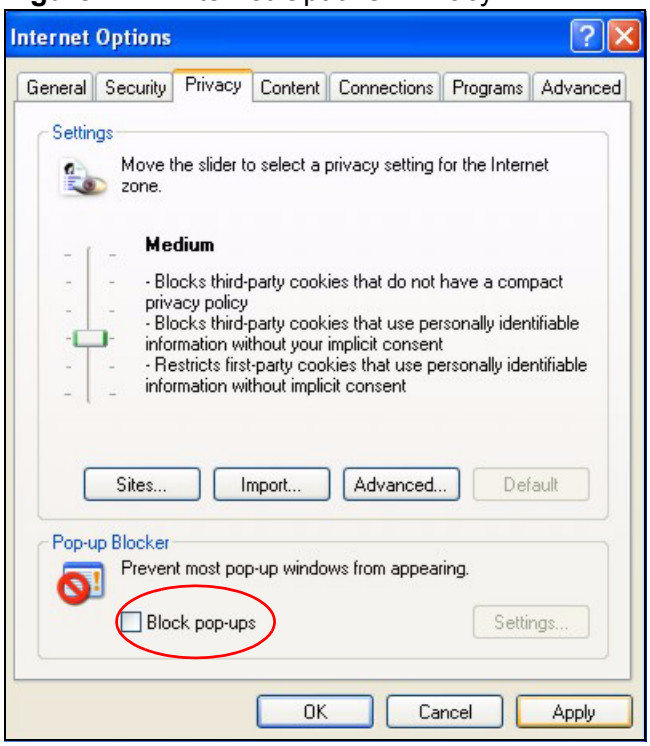


You can also check if pop-up blocking is disabled in the **Pop-up Blocker** section in the **Privacy** tab.

1 In Internet Explorer, select **Tools**, **Internet Options**, **Privacy**.

2 Clear the **Block pop-ups** check box in the **Pop-up Blocker** section of the screen. This disables any web pop-up blockers you may have enabled.

Figure 114 Internet Options: Privacy



3 Click **Apply** to save this setting.

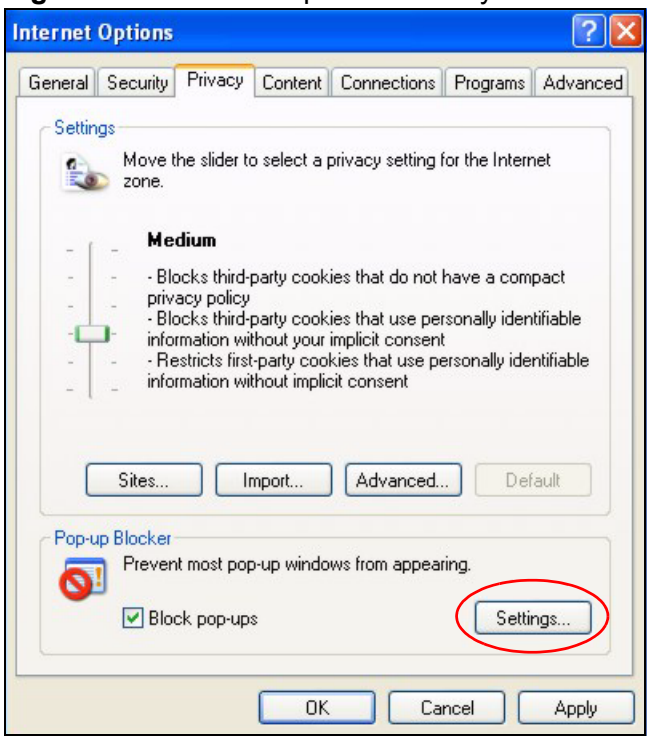
Enable Pop-up Blockers with Exceptions

Alternatively, if you only want to allow pop-up windows from your device, see the following steps.

1 In Internet Explorer, select **Tools**, **Internet Options** and then the **Privacy** tab.

2 Select **Settings...**to open the **Pop-up Blocker Settings** screen.

Figure 115 Internet Options: Privacy



3 Type the IP address of your device (the web page that you do not want to have blocked) with the prefix "http://". For example, http://192.168.167.1.

4 Click **Add** to move the IP address to the list of **Allowed sites**.

Figure 116 Pop-up Blocker Settings

Pop-up Blocker Settings
Exceptions
Pop-ups are currently blocked. You can allow pop-ups from specific Web sites by adding the site to the list below.
Address of Web site to allow:
http://192.168.1.1
Add
Allowed sites:
Remove
Remove All
Notifications and Filter Level
Play a sound when a pop-up is blocked.
Show Information Bar when a pop-up is blocked.
Filter Level:
Medium: Block most automatic pop-ups
Pop-up Blocker FAQ
Close

5 Click **Close** to return to the **Privacy** screen.

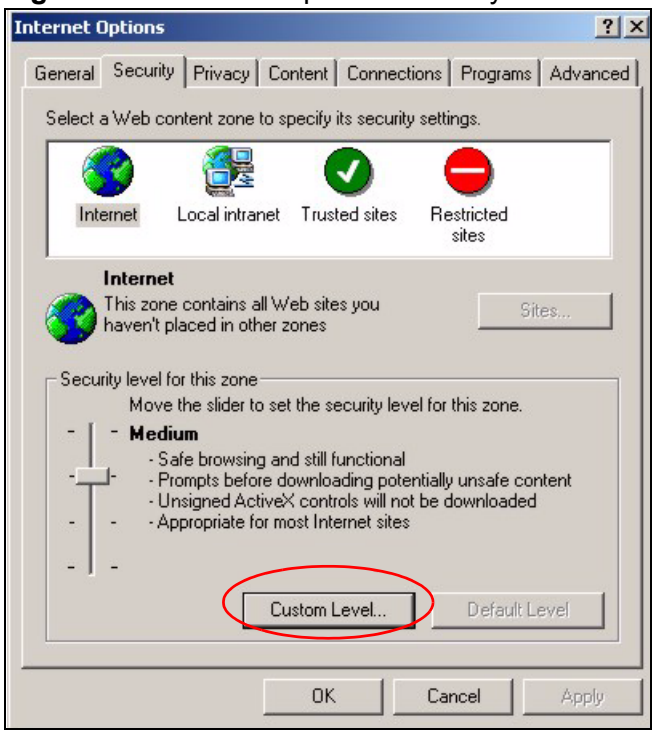
6 Click **Apply** to save this setting.

JavaScripts

If pages of the web configurator do not display properly in Internet Explorer, check that JavaScripts are allowed.

1 In Internet Explorer, click **Tools**, **Internet Options** and then the **Security** tab.

Figure 117 Internet Options: Security



2 Click the **Custom Level...** button.

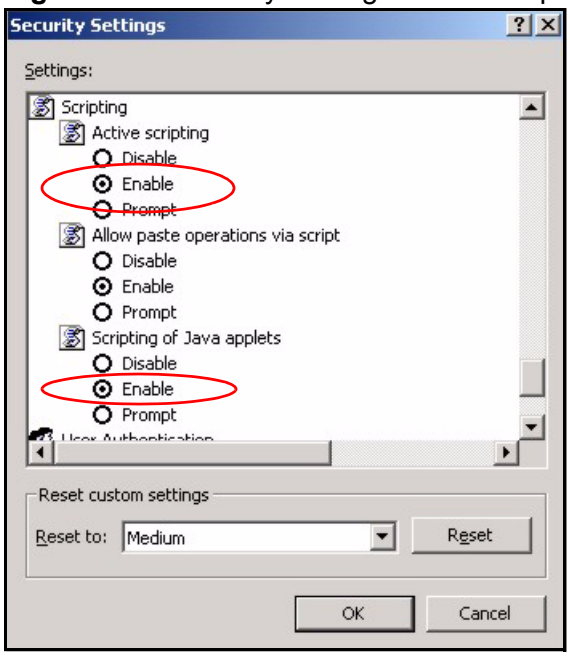
3 Scroll down to **Scripting**.

4 Under **Active scripting** make sure that **Enable** is selected (the default).

5 Under **Scripting of Java applets** make sure that **Enable** is selected (the default).

6 Click **OK** to close the window.

Figure 118 Security Settings - Java Scripting



Java Permissions

1 From Internet Explorer, click **Tools**, **Internet Options** and then the **Security** tab.

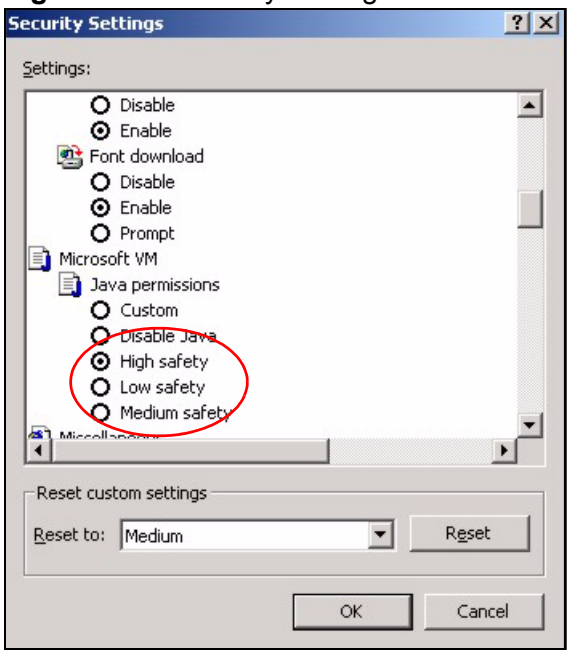
2 Click the **Custom Level...** button.

3 Scroll down to **Microsoft VM**.

4 Under **Java permissions** make sure that a safety level is selected.

5 Click **OK** to close the window.

Figure 119 Security Settings - Java



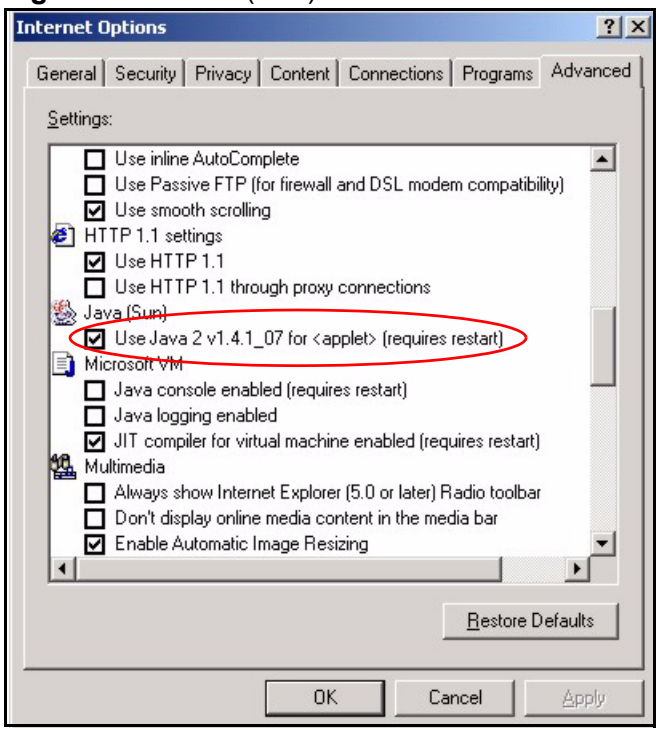
JAVA (Sun)

1 From Internet Explorer, click **Tools**, **Internet Options** and then the **Advanced** tab.

2 Make sure that **Use Java 2 for <applet>** under **Java (Sun)** is selected.

3 Click **OK** to close the window.

Figure 120 Java (Sun)

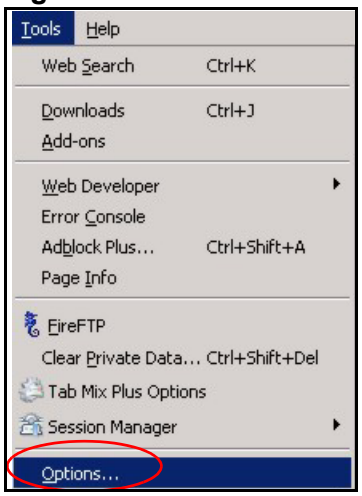


Mozilla Firefox

Mozilla Firefox 2.0 screens are used here. Screens for other versions may vary.

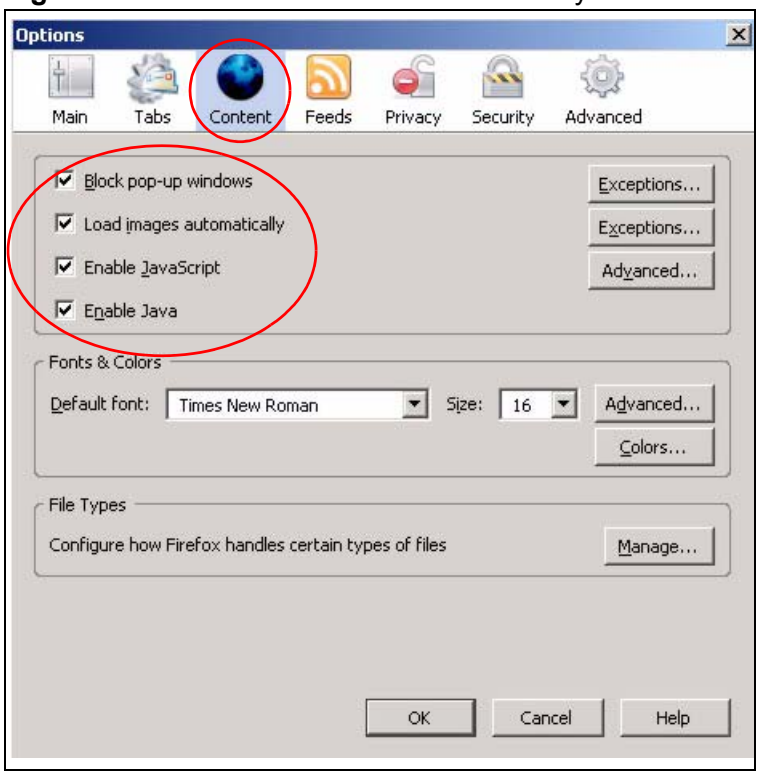
You can enable Java, Javascripts and pop-ups in one screen. Click **Tools,** then click **Options** in the screen that appears.

Figure 121 Mozilla Firefox: Tools > Options



Click **Content**.to show the screen below. Select the check boxes as shown in the following screen.

Figure 122 Mozilla Firefox Content Security



C

Common Services

The following table lists some commonly-used services and their associated protocols and port numbers. For a comprehensive list of port numbers, ICMP type/code numbers and services, visit the IANA (Internet Assigned Number Authority) web site.

- **Name**: This is a short, descriptive name for the service. You can use this one or create a different one, if you like.
- **Protocol**: This is the type of IP protocol used by the service. If this is **TCP/UDP**, then the service uses the same port number with TCP and UDP. If this is **USER-DEFINED**, the **Port(s)** is the IP protocol number, not the port number.
- **Port(s)**: This value depends on the **Protocol**. Please refer to RFC 1700 for further information about port numbers.
  - If the **Protocol** is **TCP**, **UDP**, or **TCP/UDP**, this is the IP port number.
  - If the **Protocol** is **USER**, this is the IP protocol number.
- **Description**: This is a brief explanation of the applications that use this service or the situations in which this service is used.

Table 77 Commonly Used Services

NAME	PROTOCOL	PORT(S)	DESCRIPTION
AH (IPSEC_TUNNEL)	User-Defined	51	The IPSEC AH (Authentication Header) tunneling protocol uses this service.
AIM/New-ICQ	TCP	5190	AOL's Internet Messenger service. It is also used as a listening port by ICQ.
AUTH	TCP	113	Authentication protocol used by some servers.
BGP	TCP	179	Border Gateway Protocol.
BOOTP_CLIENT	UDP	68	DHCP Client.
BOOTP_SERVER	UDP	67	DHCP Server.
CU-SEEME	TCP UDP	7648 24032	A popular videoconferencing solution from White Pines Software.
DNS	TCP/UDP	53	Domain Name Server, a service that matches web names (for example www.zyxel.com) to IP numbers.

Table 77 Commonly Used Services (continued)

NAME	PROTOCOL	PORT(S)	DESCRIPTION
ESP (IPSEC_TUNNEL)	User-Defined	50	The IPSEC ESP (Encapsulation Security Protocol) tunneling protocol uses this service.
FINGER	TCP	79	Finger is a UNIX or Internet related command that can be used to find out if a user is logged on.
FTP	TCP TCP	20 21	File Transfer Program, a program to enable fast transfer of files, including large files that may not be possible by e-mail.
H.323	TCP	1720	NetMeeting uses this protocol.
HTTP	TCP	80	Hyper Text Transfer Protocol - a client/server protocol for the world wide web.
HTTPS	TCP	443	HTTPS is a secured http session often used in e-commerce.
ICMP	User-Defined	1	Internet Control Message Protocol is often used for diagnostic or routing purposes.
ICQ	UDP	4000	This is a popular Internet chat program.
IGMP (MULTICAST)	User-Defined	2	Internet Group Management Protocol is used when sending packets to a specific group of hosts.
IKE	UDP	500	The Internet Key Exchange algorithm is used for key distribution and management.
IRC	TCP/UDP	6667	This is another popular Internet chat program.
MSN Messenger	TCP	1863	Microsoft Networks' messenger service uses this protocol.
NEW-ICQ	TCP	5190	An Internet chat program.
NEWS	TCP	144	A protocol for news groups.
NFS	UDP	2049	Network File System - NFS is a client/server distributed file service that provides transparent file sharing for network environments.
NNTP	TCP	119	Network News Transport Protocol is the delivery mechanism for the USENET newsgroup service.
PING	User-Defined	1	Packet INternet Groper is a protocol that sends out ICMP echo requests to test whether or not a remote host is reachable.
POP3	TCP	110	Post Office Protocol version 3 lets a client computer get e-mail from a POP3 server through a temporary connection (TCP/IP or other).

Table 77 Commonly Used Services (continued)

NAME	PROTOCOL	PORT(S)	DESCRIPTION
PPTP	TCP	1723	Point-to-Point Tunneling Protocol enables secure transfer of data over public networks. This is the control channel.
PPTP_TUNNEL (GRE)	User-Defined	47	PPTP (Point-to-Point Tunneling Protocol) enables secure transfer of data over public networks. This is the data channel.
RCMD	TCP	512	Remote Command Service.
REAL_AUDIO	TCP	7070	A streaming audio service that enables real time sound over the web.
REXEC	TCP	514	Remote Execution Daemon.
RLOGIN	TCP	513	Remote Login.
RTELNET	TCP	107	Remote Telnet.
RTSP	TCP/UDP	554	The Real Time Streaming (media control) Protocol (RTSP) is a remote control for multimedia on the Internet.
SFTP	TCP	115	Simple File Transfer Protocol.
SMTP	TCP	25	Simple Mail Transfer Protocol is the message-exchange standard for the Internet. SMTP enables you to move messages from one e-mail server to another.
SNMP	TCP/UDP	161	Simple Network Management Program.
SNMP-TRAPS	TCP/UDP	162	Traps for use with the SNMP (RFC:1215).
SQL-NET	TCP	1521	Structured Query Language is an interface to access data on many different types of database systems, including mainframes, midrange systems, UNIX systems and network servers.
SSH	TCP/UDP	22	Secure Shell Remote Login Program.
STRM WORKS	UDP	1558	Stream Works Protocol.
SYSLOG	UDP	514	Syslog allows you to send system logs to a UNIX server.
TACACS	UDP	49	Login Host Protocol used for (Terminal Access Controller Access Control System).
TELNET	TCP	23	Telnet is the login and terminal emulation protocol common on the Internet and in UNIX environments. It operates over TCP/IP networks. Its primary function is to allow users to log into remote host systems.

Table 77 Commonly Used Services (continued)

NAME	PROTOCOL	PORT(S)	DESCRIPTION
TFTP	UDP	69	Trivial File Transfer Protocol is an Internet file transfer protocol similar to FTP, but uses the UDP (User Datagram Protocol) rather than TCP (Transmission Control Protocol).
VDOLIVE	TCP	7000	Another videoconferencing solution.

D

Importing Certificates

This appendix shows you how to import public key certificates into your web browser.

Public key certificates are used by web browsers to ensure that a secure web site is legitimate. When a certificate authority such as VeriSign, Comodo, or Network Solutions, to name a few, receives a certificate request from a website operator, they confirm that the web domain and contact information in the request match those on public record with a domain name registrar. If they match, then the certificate is issued to the website operator, who then places it on the site to be issued to all visiting web browsers to let them know that the site is legitimate.

Many ZyXEL products, such as the NSA-2401, issue their own public key certificates. These can be used by web browsers on a LAN or WAN to verify that they are in fact connecting to the legitimate device and not one masquerading as it. However, because the certificates were not issued by one of the several organizations officially recognized by the most common web browsers, you will need to import the ZyXEL-created certificate into your web browser and flag that certificate as a trusted authority.

Note: You can see if you are browsing on a secure website if the URL in your web browser's address bar begins with `https://` or there is a sealed padlock icon ( ) somewhere in the main browser window (not all browsers show the padlock in the same location.)

In this appendix, you can import a public key certificate for:

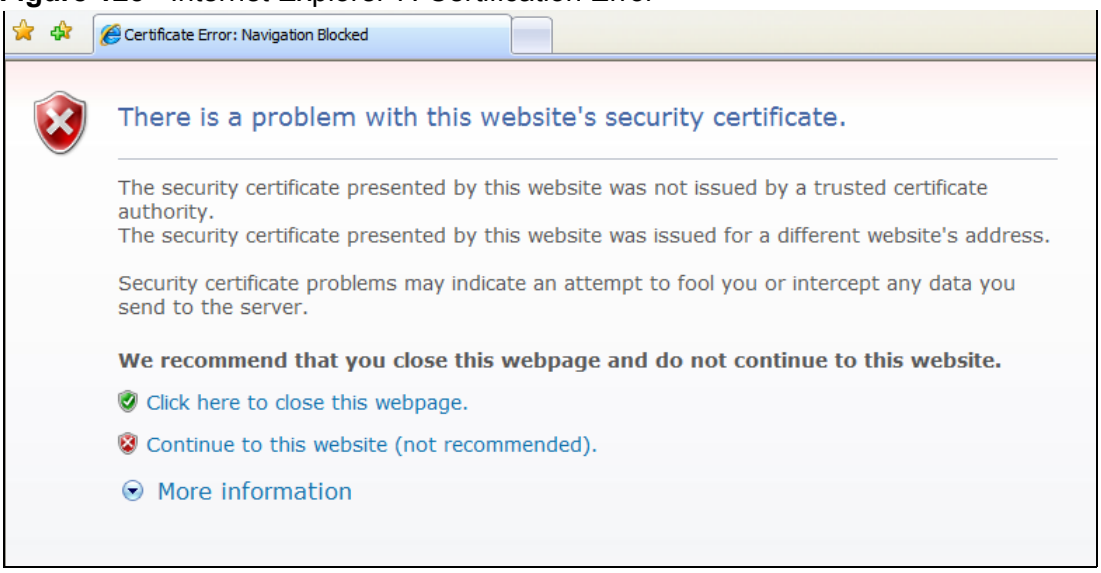
- Internet Explorer on page 286
- Firefox on page 296
- Opera on page 302
- Konqueror on page 310

Internet Explorer

The following example uses Microsoft Internet Explorer 7 on Windows XP Professional; however, they can also apply to Internet Explorer on Windows Vista.

1 If your device's Web Configurator is set to use SSL certification, then the first time you browse to it you are presented with a certification error.

Figure 123 Internet Explorer 7: Certification Error

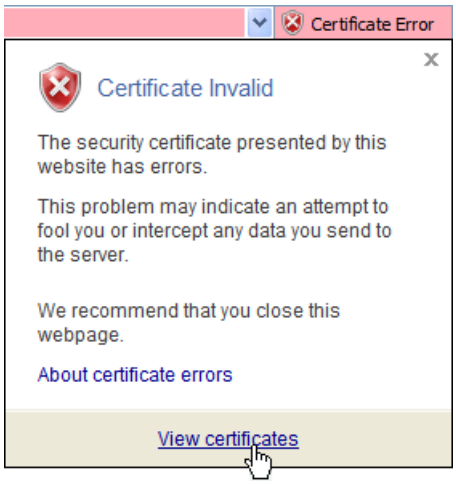

Certificate Error: Navigation Blocked
There is a problem with this website's security certificate.
The security certificate presented by this website was not issued by a trusted certificate authority.
The security certificate presented by this website was issued for a different website's address.
Security certificate problems may indicate an attempt to fool you or intercept any data you send to the server.
We recommend that you close this webpage and do not continue to this website.
Click here to close this webpage.
Continue to this website (not recommended).
More information

2 Click **Continue to this website (not recommended)**.

Figure 124 Internet Explorer 7: Certification Error

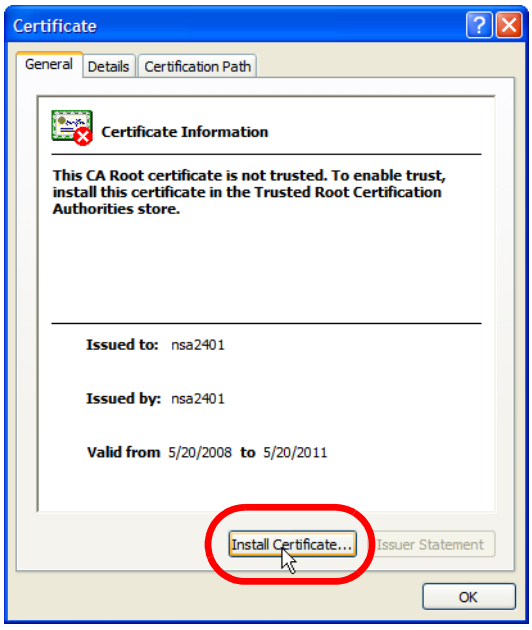
3 In the **Address Bar**, click **Certificate Error** > **View certificates**.

Figure 125 Internet Explorer 7: Certificate Error


Certificate Error
Certificate Invalid
The security certificate presented by this website has errors.
This problem may indicate an attempt to fool you or intercept any data you send to the server.
We recommend that you close this webpage.
About certificate errors
View certificates

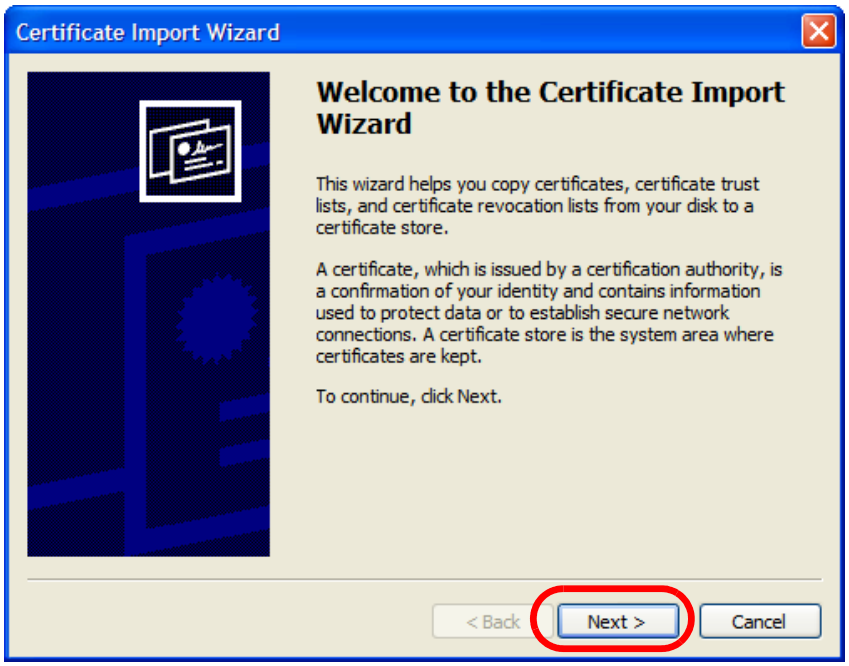
4 In the **Certificate** dialog box, click **Install Certificate**.

Figure 126 Internet Explorer 7: Certificate



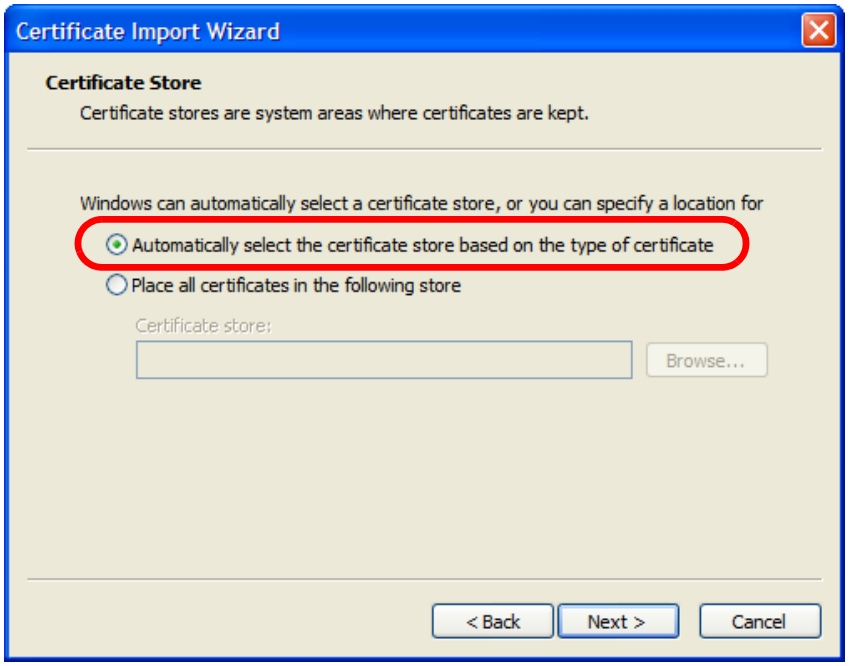
5 In the **Certificate Import Wizard**, click **Next**.

Figure 127 Internet Explorer 7: Certificate Import Wizard


Certificate Import Wizard
Welcome to the Certificate Import Wizard
This wizard helps you copy certificates, certificate trust lists, and certificate revocation lists from your disk to a certificate store.
A certificate, which is issued by a certification authority, is a confirmation of your identity and contains information used to protect data or to establish secure network connections. A certificate store is the system area where certificates are kept.
To continue, click Next.
< Back
Next >
Cancel

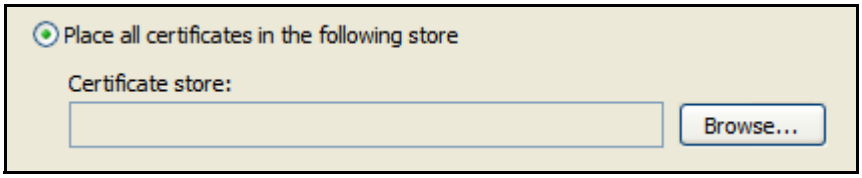
6 If you want Internet Explorer to **Automatically select certificate store based on the type of certificate**, click **Next** again and then go to step 9.

Figure 128 Internet Explorer 7: Certificate Import Wizard


Certificate Import Wizard
Certificate Store
Certificate stores are system areas where certificates are kept.
Windows can automatically select a certificate store, or you can specify a location for
Automatically select the certificate store based on the type of certificate
Place all certificates in the following store
Certificate store:
Browse...
< Back
Next >
Cancel

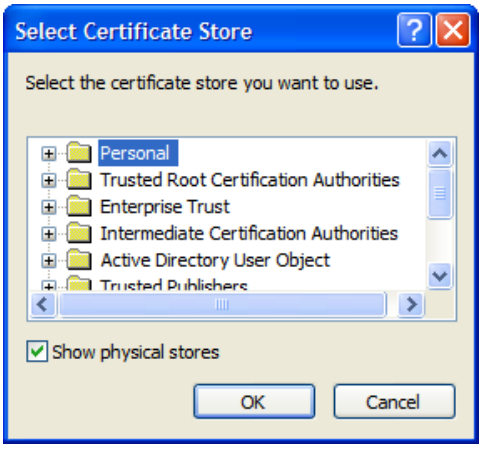
7 Otherwise, select **Place all certificates in the following store** and then click **Browse**.

Figure 129 Internet Explorer 7: Certificate Import Wizard



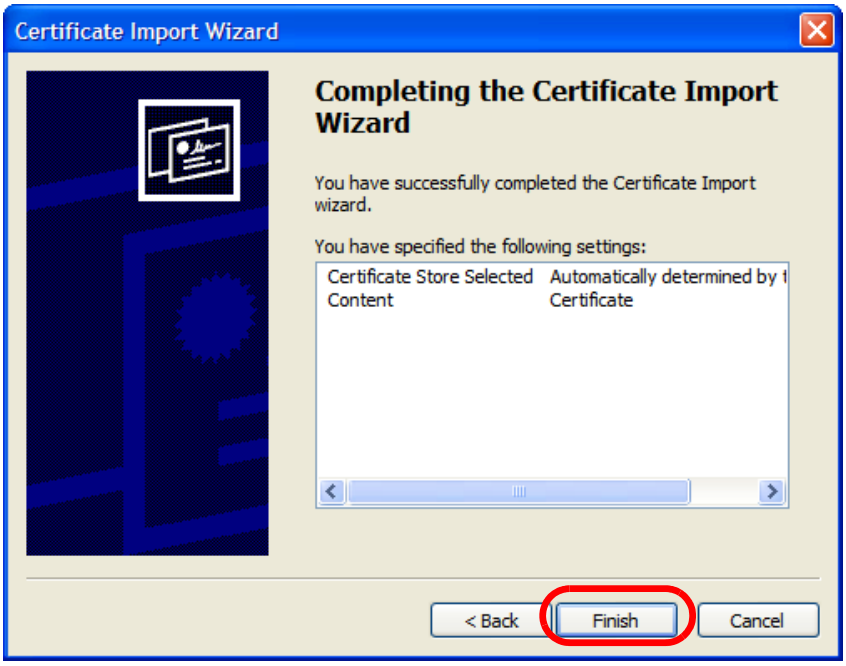
8 In the **Select Certificate Store** dialog box, choose a location in which to save the certificate and then click **OK**.

Figure 130 Internet Explorer 7: Select Certificate Store



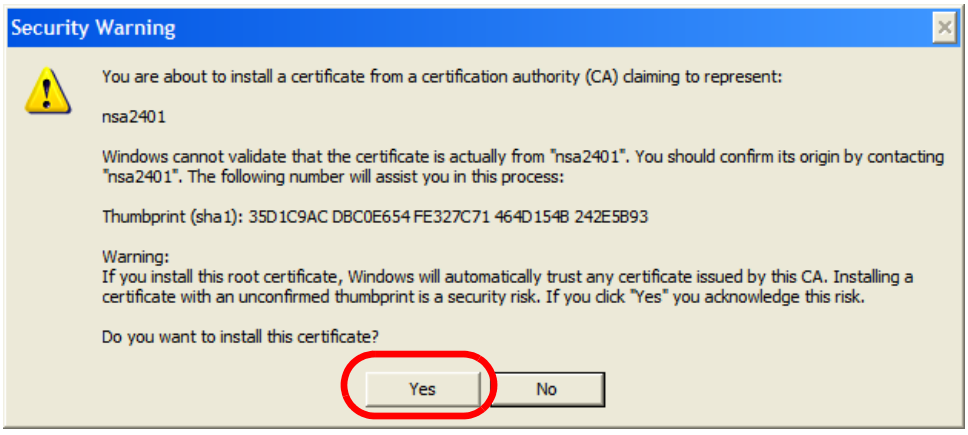
9 In the **Completing the Certificate Import Wizard** screen, click **Finish**.

Figure 131 Internet Explorer 7: Certificate Import Wizard



10 If you are presented with another **Security Warning**, click **Yes**.

Figure 132 Internet Explorer 7: Security Warning

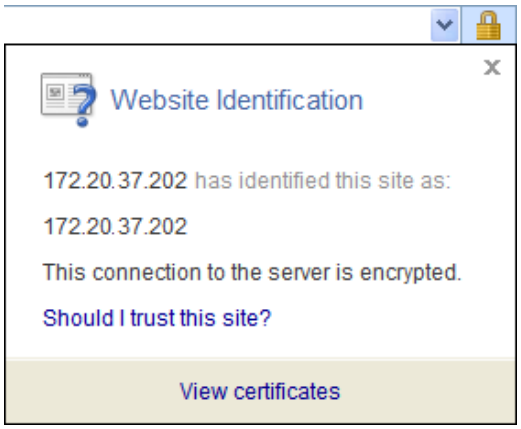

Security Warning
You are about to install a certificate from a certification authority (CA) claiming to represent:
nsa2401
Windows cannot validate that the certificate is actually from "nsa2401". You should confirm its origin by contacting "nsa2401". The following number will assist you in this process:
Thumbprint (sha1): 35D1C9AC DBC0E654 FE327C71 464D154B 242E5B93
Warning:
If you install this root certificate, Windows will automatically trust any certificate issued by this CA. Installing a certificate with an unconfirmed thumbprint is a security risk. If you click "Yes" you acknowledge this risk.
Do you want to install this certificate?
Yes
No

11 Finally, click **OK** when presented with the successful certificate installation message.

Figure 133 Internet Explorer 7: Certificate Import Wizard

12 The next time you start Internet Explorer and go to a ZyXEL Web Configurator page, a sealed padlock icon appears in the address bar. Click it to view the page's **Website Identification** information.

Figure 134 Internet Explorer 7: Website Identification



Installing a Stand-Alone Certificate File in Internet Explorer

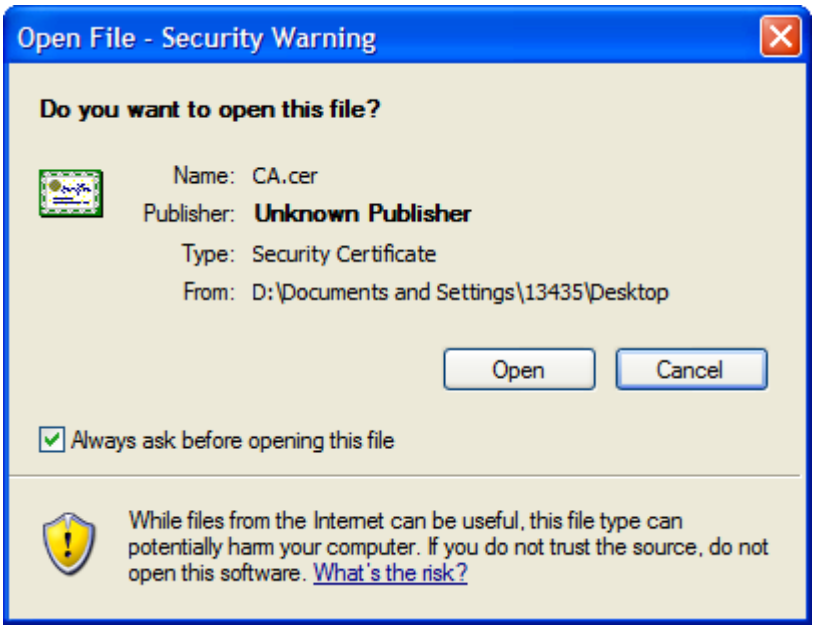
Rather than browsing to a ZyXEL Web Configurator and installing a public key certificate when prompted, you can install a stand-alone certificate file if one has been issued to you.

1 Double-click the public key certificate file.

Figure 135 Internet Explorer 7: Public Key Certificate File

2 In the security warning dialog box, click **Open**.

Figure 136 Internet Explorer 7: Open File - Security Warning


Open File - Security Warning
Do you want to open this file?
Name: CA.cer
Publisher: Unknown Publisher
Type: Security Certificate
From: D:\Documents and Settings\13435\Desktop
Open
Cancel
Always ask before opening this file
While files from the Internet can be useful, this file type can potentially harm your computer. If you do not trust the source, do not open this software. What's the risk?

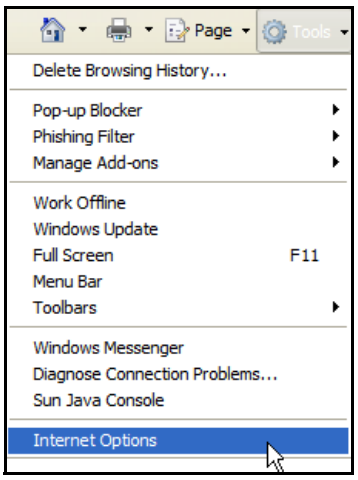
3 Refer to steps 4-12 in the Internet Explorer procedure beginning on page 286 to complete the installation process.

Removing a Certificate in Internet Explorer

This section shows you how to remove a public key certificate in Internet Explorer 7.

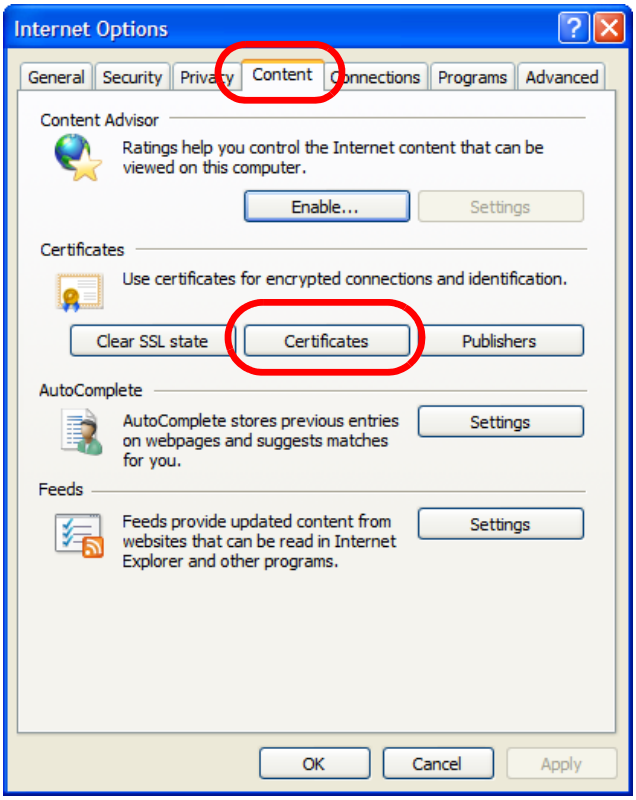
1 Open **Internet Explorer** and click **Tools > Internet Options**.

Figure 137 Internet Explorer 7: Tools Menu



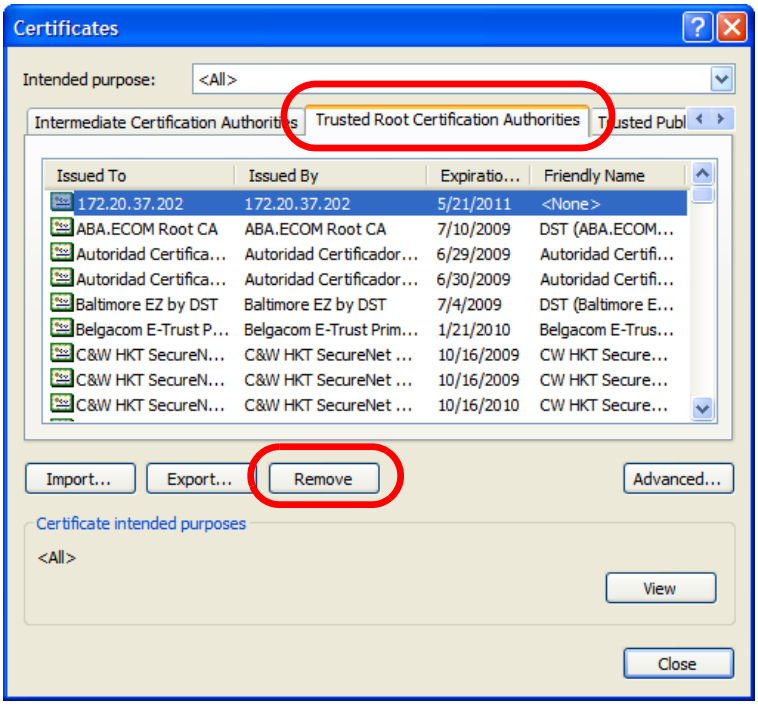
2 In the **Internet Options** dialog box, click **Content** > **Certificates**.

Figure 138 Internet Explorer 7: Internet Options



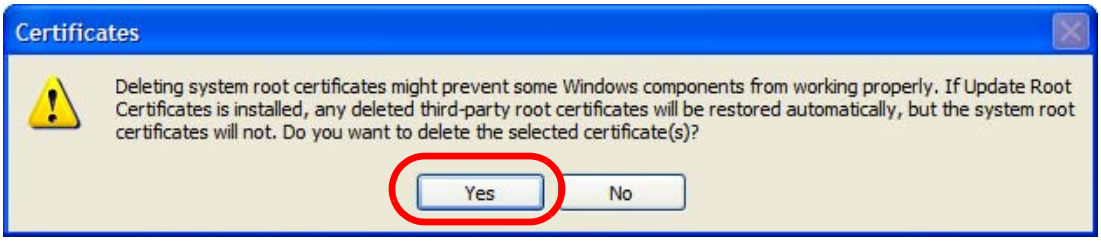
3 In the **Certificates** dialog box, click the **Trusted Root Certificates Authorities** tab, select the certificate that you want to delete, and then click **Remove**.

Figure 139 Internet Explorer 7: Certificates



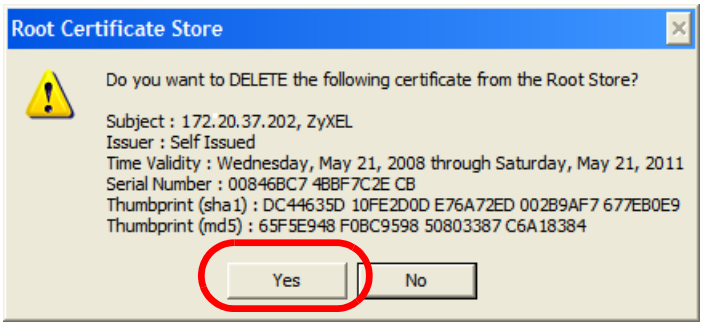
4 In the **Certificates** confirmation, click **Yes**.

Figure 140 Internet Explorer 7: Certificates


Certificates
Deleting system root certificates might prevent some Windows components from working properly. If Update Root Certificates is installed, any deleted third-party root certificates will be restored automatically, but the system root certificates will not. Do you want to delete the selected certificate(s)?
Yes
No

5 In the **Root Certificate Store** dialog box, click **Yes**.

Figure 141 Internet Explorer 7: Root Certificate Store


Root Certificate Store
Do you want to DELETE the following certificate from the Root Store?
Subject : 172.20.37.202, ZyXEL
Issuer : Self Issued
Time Validity : Wednesday, May 21, 2008 through Saturday, May 21, 2011
Serial Number : 00846BC7 4BBF7C2E CB
Thumbprint (sha1) : DC44635D 10FE2D0D E76A72ED 002B9AF7 677EB0E9
Thumbprint (md5) : 65F5E948 F0BC9598 50803387 C6A18384
Yes
No

6 The next time you go to the web site that issued the public key certificate you just removed, a certification error appears.

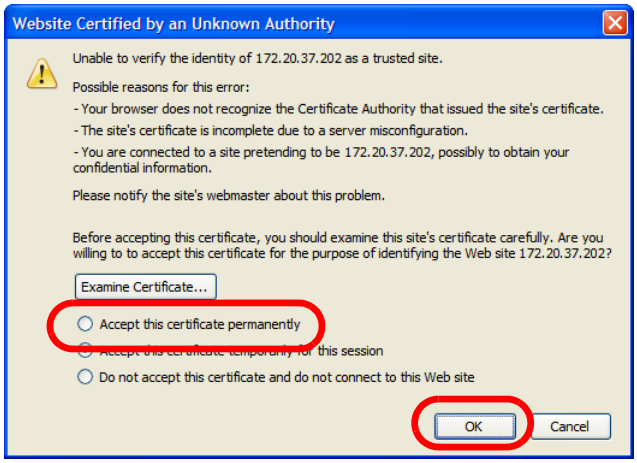
Firefox

The following example uses Mozilla Firefox 2 on Windows XP Professional; however, the screens can also apply to Firefox 2 on all platforms.

1 If your device's Web Configurator is set to use SSL certification, then the first time you browse to it you are presented with a certification error.

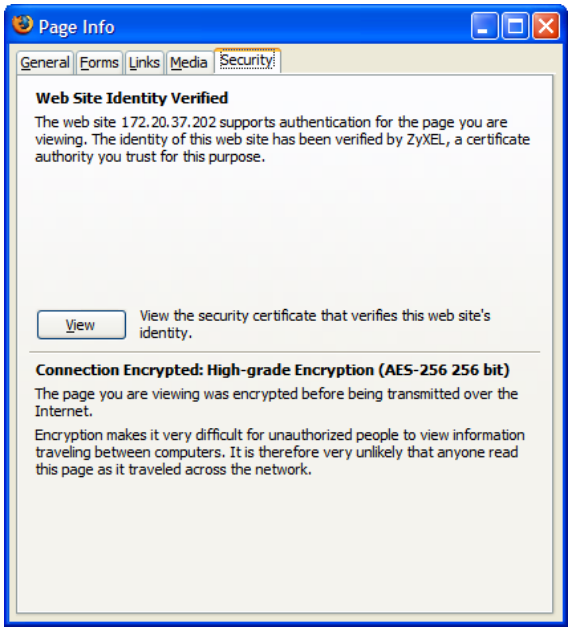
2 Select **Accept this certificate permanently** and click **OK.**

Figure 142 Firefox 2: Website Certified by an Unknown Authority


Website Certified by an Unknown Authority
Unable to verify the identity of 172.20.37.202 as a trusted site.
Possible reasons for this error:
- Your browser does not recognize the Certificate Authority that issued the site's certificate.
- The site's certificate is incomplete due to a server misconfiguration.
- You are connected to a site pretending to be 172.20.37.202, possibly to obtain your confidential information.
Please notify the site's webmaster about this problem.
Before accepting this certificate, you should examine this site's certificate carefully. Are you willing to to accept this certificate for the purpose of identifying the Web site 172.20.37.202?
Examine Certificate...
Accept this certificate permanently
Do not accept this certificate and do not connect to this Web site
OK
Cancel

3 The certificate is stored and you can now connect securely to the Web Configurator. A sealed padlock appears in the address bar, which you can click to open the **Page Info > Security** window to view the web page's security information.

Figure 143 Firefox 2: Page Info

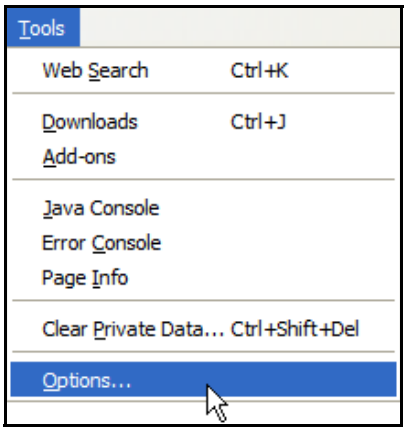

Page Info
General
Forms
Links
Media
Security
Web Site Identity Verified
The web site 172.20.37.202 supports authentication for the page you are viewing. The identity of this web site has been verified by ZyXEL, a certificate authority you trust for this purpose.
View
View the security certificate that verifies this web site's identity.
Connection Encrypted: High-grade Encryption (AES-256 256 bit)
The page you are viewing was encrypted before being transmitted over the Internet.
Encryption makes it very difficult for unauthorized people to view information traveling between computers. It is therefore very unlikely that anyone read this page as it traveled across the network.

Installing a Stand-Alone Certificate File in Firefox

Rather than browsing to a ZyXEL Web Configurator and installing a public key certificate when prompted, you can install a stand-alone certificate file if one has been issued to you.

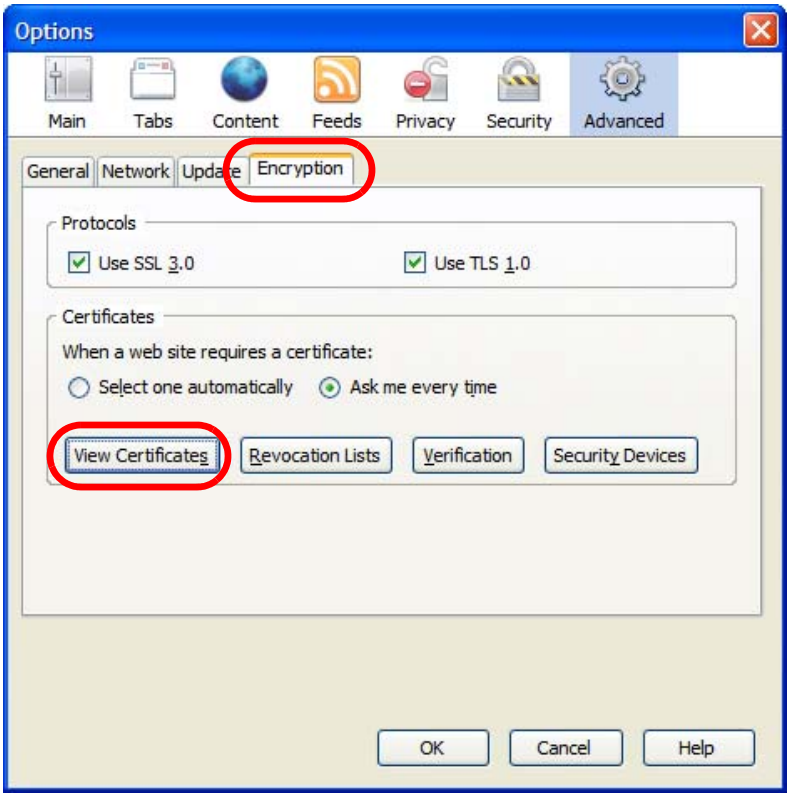
1 Open **Firefox** and click **Tools > Options**.

Figure 144 Firefox 2: Tools Menu



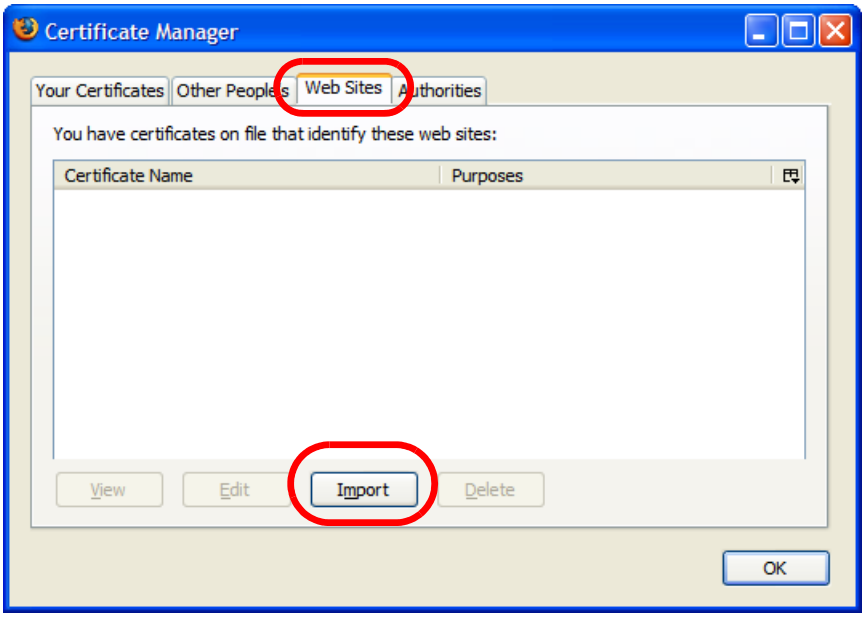
2 In the **Options** dialog box, click **Advanced** > **Encryption** > **View Certificates**.

Figure 145 Firefox 2: Options



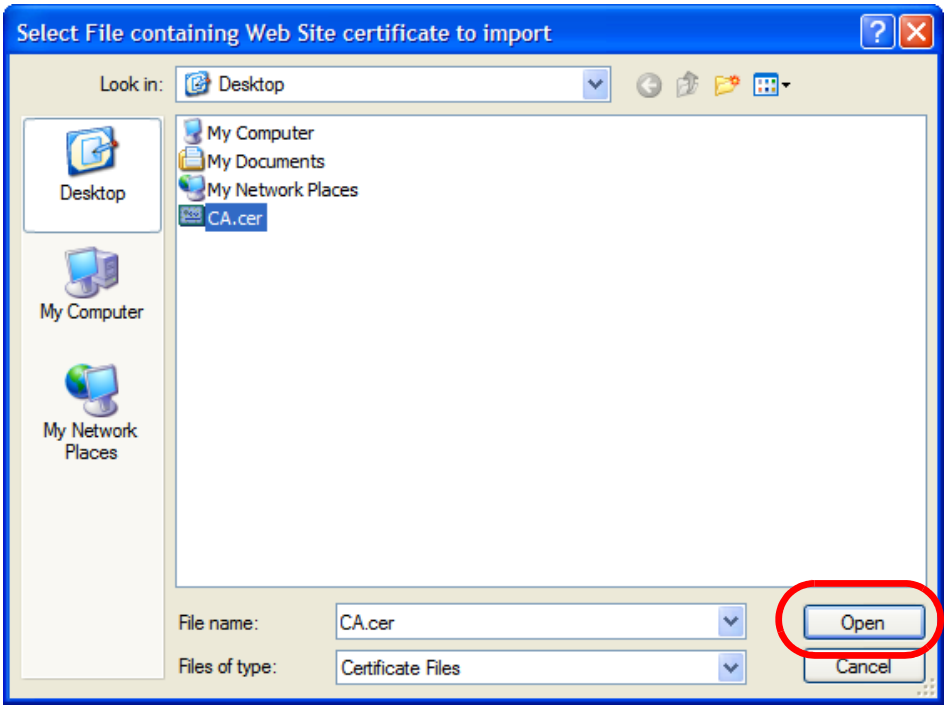
3 In the **Certificate Manager** dialog box, click **Web Sites** > **Import**.

Figure 146 Firefox 2: Certificate Manager



4 Use the **Select File** dialog box to locate the certificate and then click **Open**.

Figure 147 Firefox 2: Select File



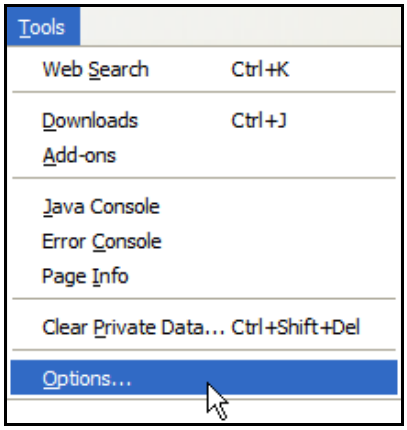
5 The next time you visit the web site, click the padlock in the address bar to open the **Page Info > Security** window to see the web page's security information.

Removing a Certificate in Firefox

This section shows you how to remove a public key certificate in Firefox 2.

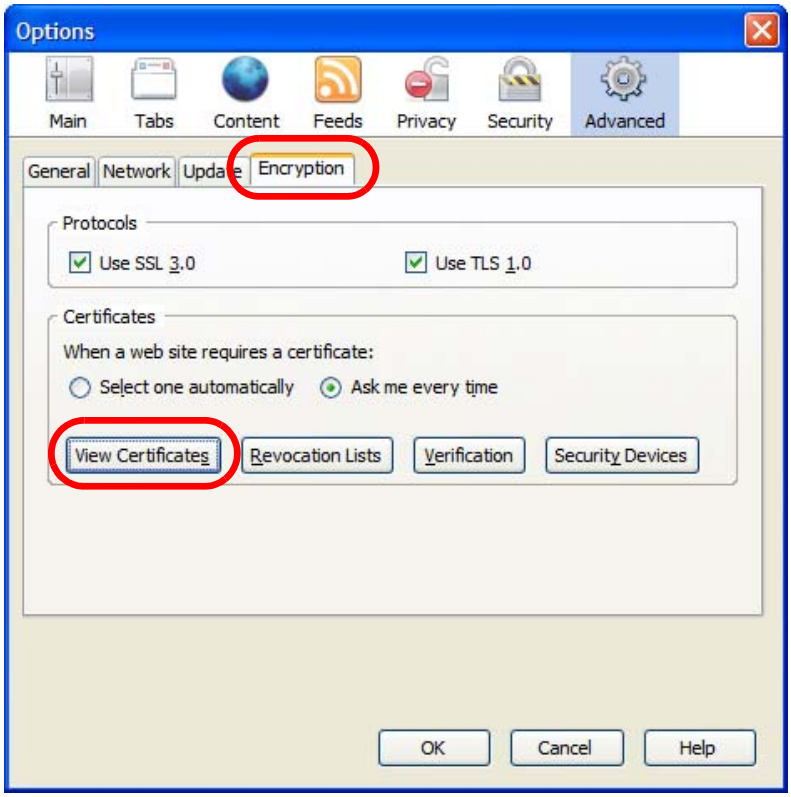
1 Open **Firefox** and click **Tools** > **Options**.

Figure 148 Firefox 2: Tools Menu



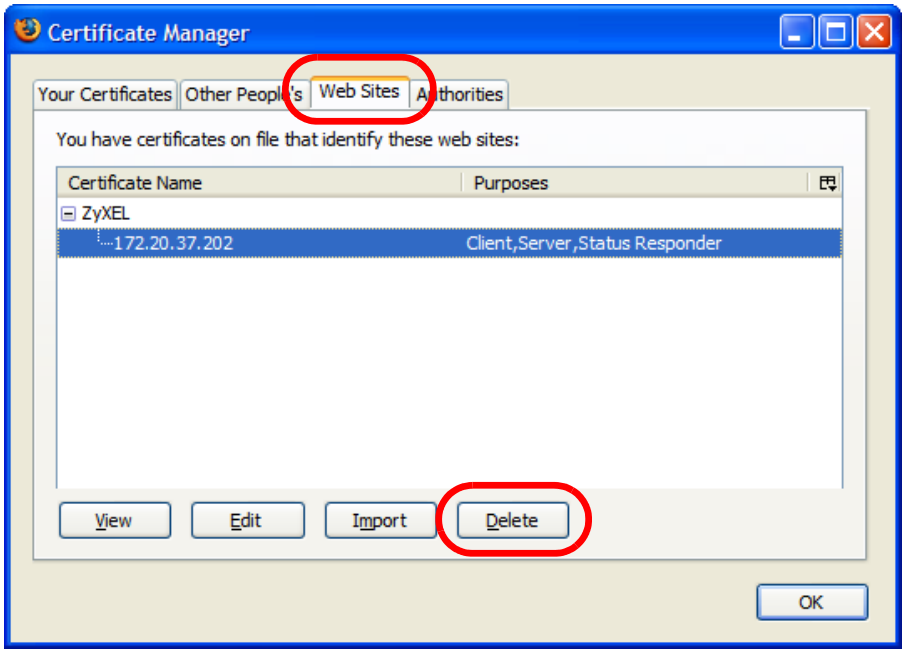
2 In the **Options** dialog box, click **Advanced** > **Encryption** > **View Certificates**.

Figure 149 Firefox 2: Options



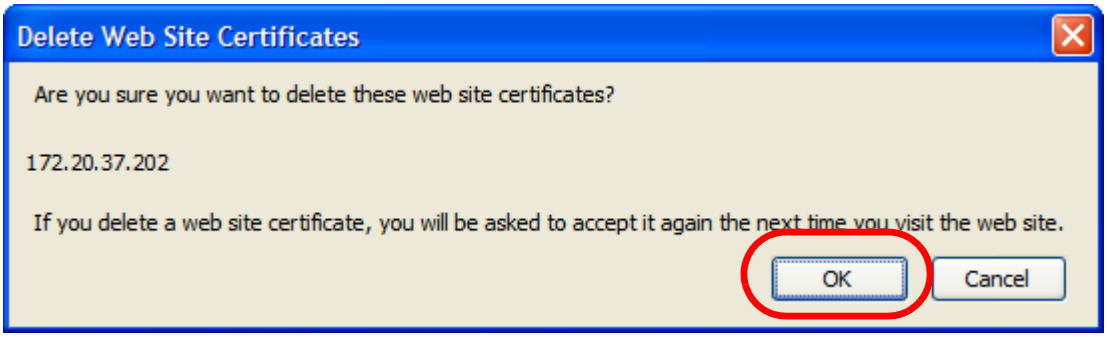
3 In the **Certificate Manager** dialog box, select the **Web Sites** tab, select the certificate that you want to remove, and then click **Delete**.

Figure 150 Firefox 2: Certificate Manager



4 In the **Delete Web Site Certificates** dialog box, click **OK**.

Figure 151 Firefox 2: Delete Web Site Certificates


Delete Web Site Certificates
Are you sure you want to delete these web site certificates?
172.20.37.202
If you delete a web site certificate, you will be asked to accept it again the next time you visit the web site.
OK
Cancel

5 The next time you go to the web site that issued the public key certificate you just removed, a certification error appears.

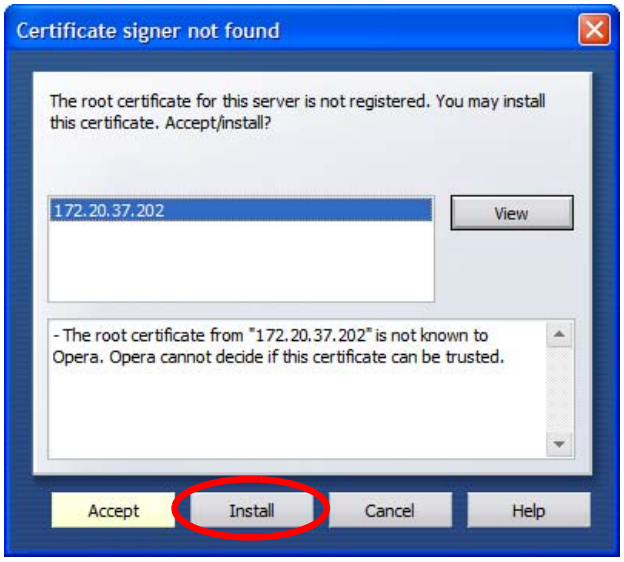
Opera

The following example uses Opera 9 on Windows XP Professional; however, the screens can apply to Opera 9 on all platforms.

1 If your device's Web Configurator is set to use SSL certification, then the first time you browse to it you are presented with a certification error.

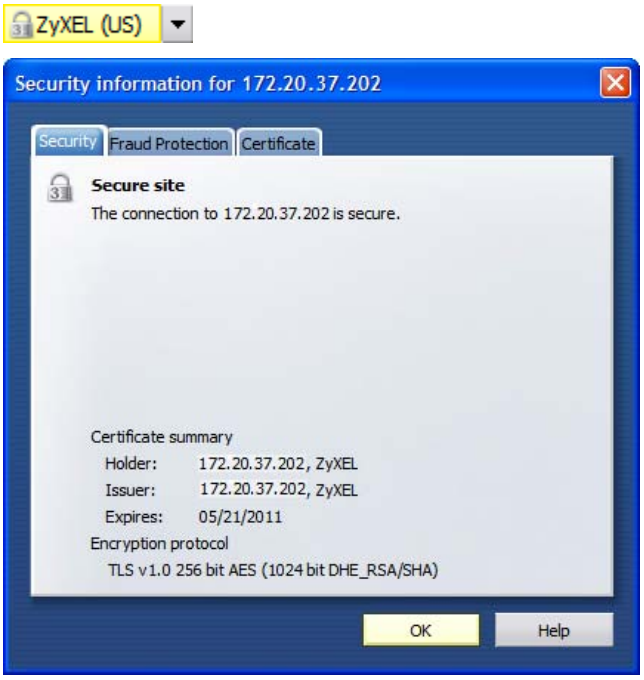
2 Click **Install** to accept the certificate.

Figure 152 Opera 9: Certificate signer not found


Certificate signer not found
The root certificate for this server is not registered. You may install this certificate. Accept/install?
172.20.37.202
View
- The root certificate from "172.20.37.202" is not known to Opera. Opera cannot decide if this certificate can be trusted.
Accept
Install
Cancel
Help

3 The next time you visit the web site, click the padlock in the address bar to open the **Security information** window to view the web page's security details.

Figure 153 Opera 9: Security information

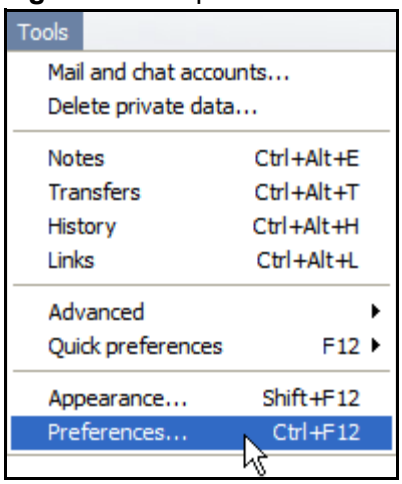


Installing a Stand-Alone Certificate File in Opera

Rather than browsing to a ZyXEL Web Configurator and installing a public key certificate when prompted, you can install a stand-alone certificate file if one has been issued to you.

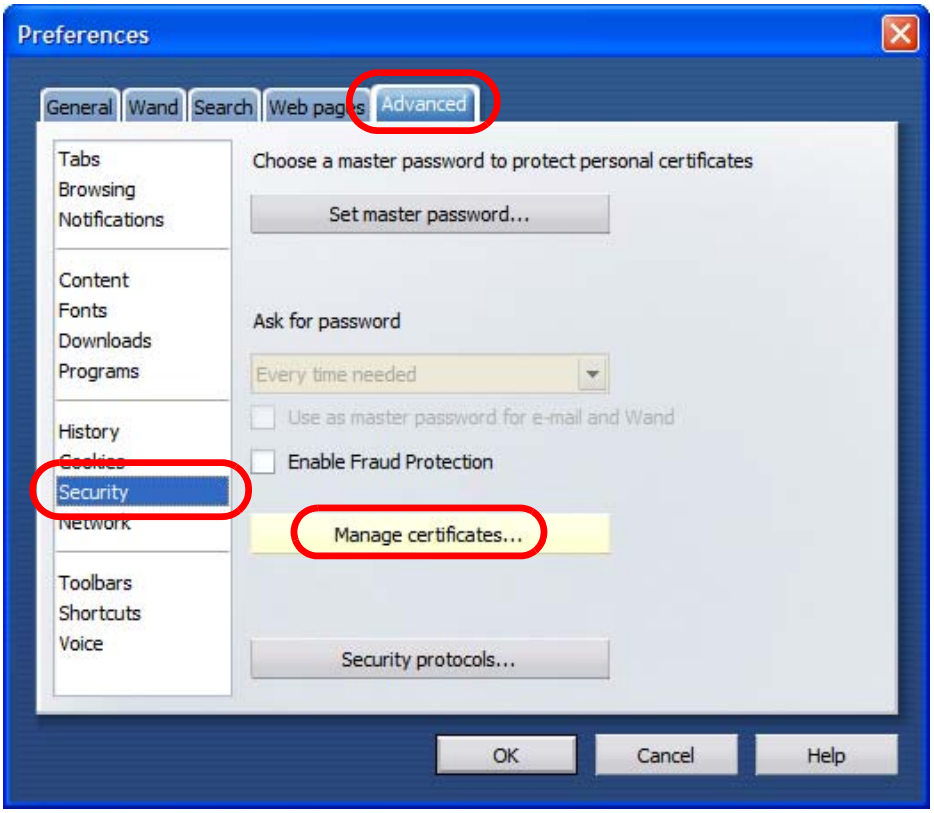
1 Open **Opera** and click **Tools** > **Preferences**.

Figure 154 Opera 9: Tools Menu



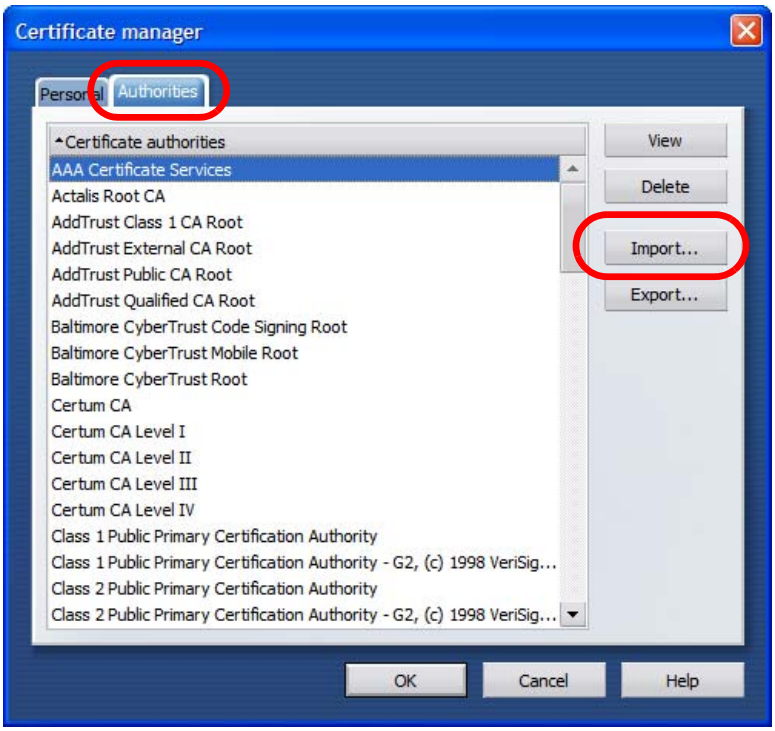
2 In **Preferences**, click **Advanced** > **Security** > **Manage certificates**.

Figure 155 Opera 9: Preferences



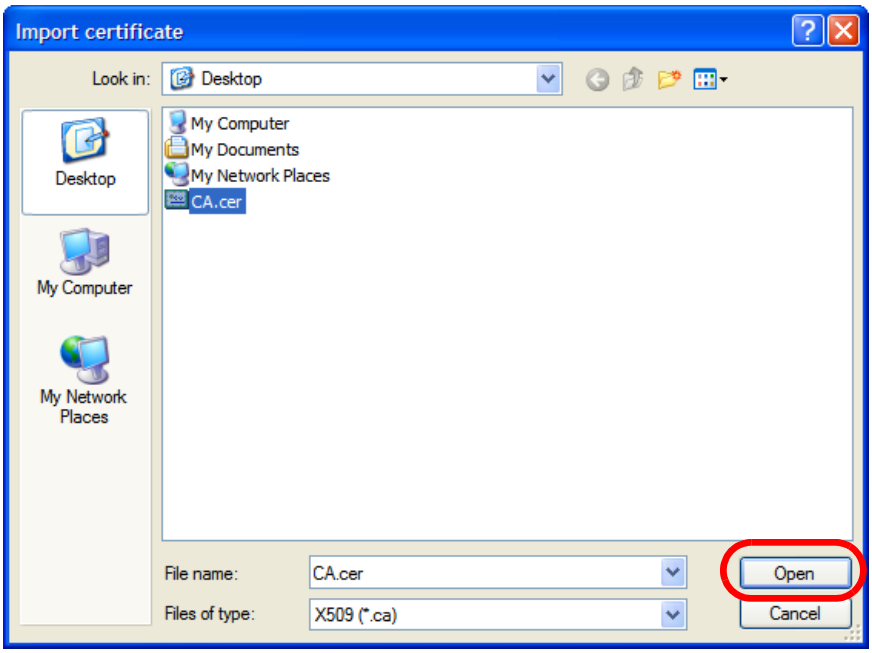
3 In the **Certificates Manager**, click **Authorities** > **Import**.

Figure 156 Opera 9: Certificate manager



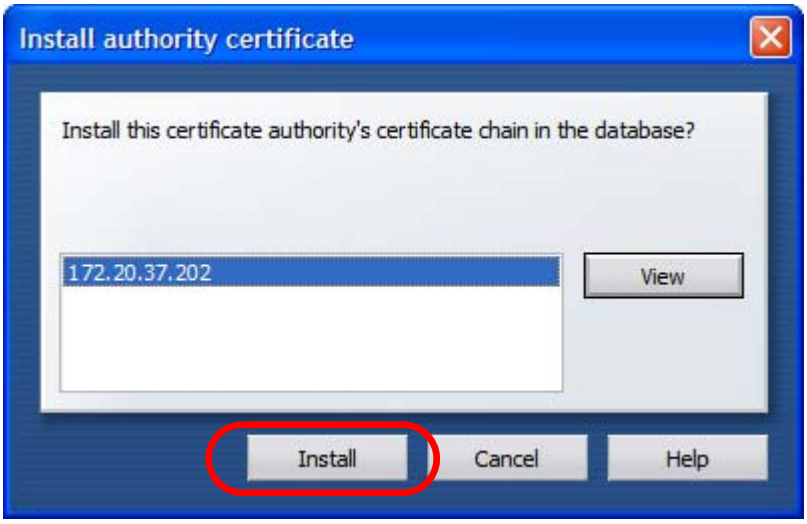
4 Use the **Import certificate** dialog box to locate the certificate and then click **Open.**

Figure 157 Opera 9: Import certificate



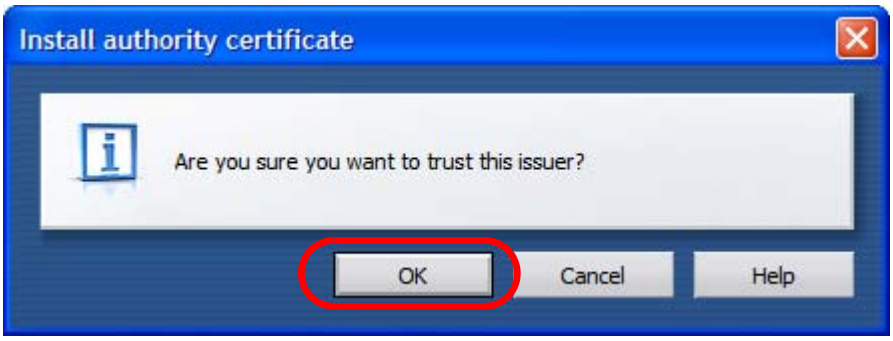
5 In the **Install authority certificate** dialog box, click **Install**.

Figure 158 Opera 9: Install authority certificate



6 Next, click **OK**.

Figure 159 Opera 9: Install authority certificate



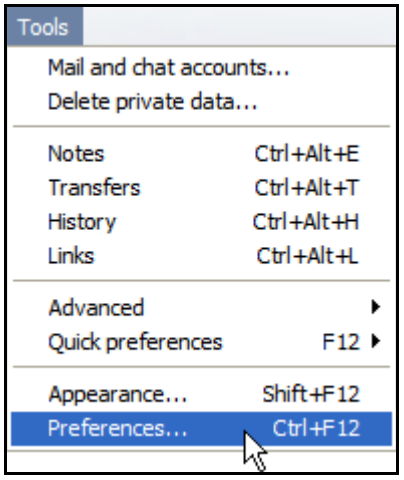
7 The next time you visit the web site, click the padlock in the address bar to open the **Security information** window to view the web page's security details.

Removing a Certificate in Opera

This section shows you how to remove a public key certificate in Opera 9.

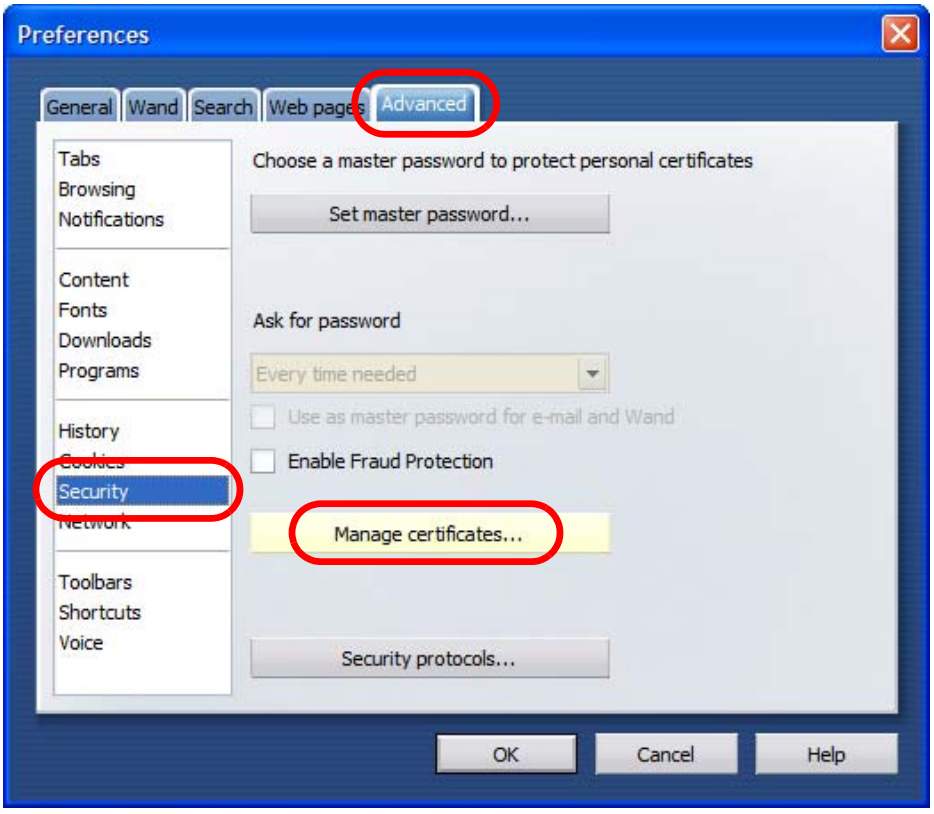
1 Open **Opera** and click **Tools** > **Preferences**.

Figure 160 Opera 9: Tools Menu



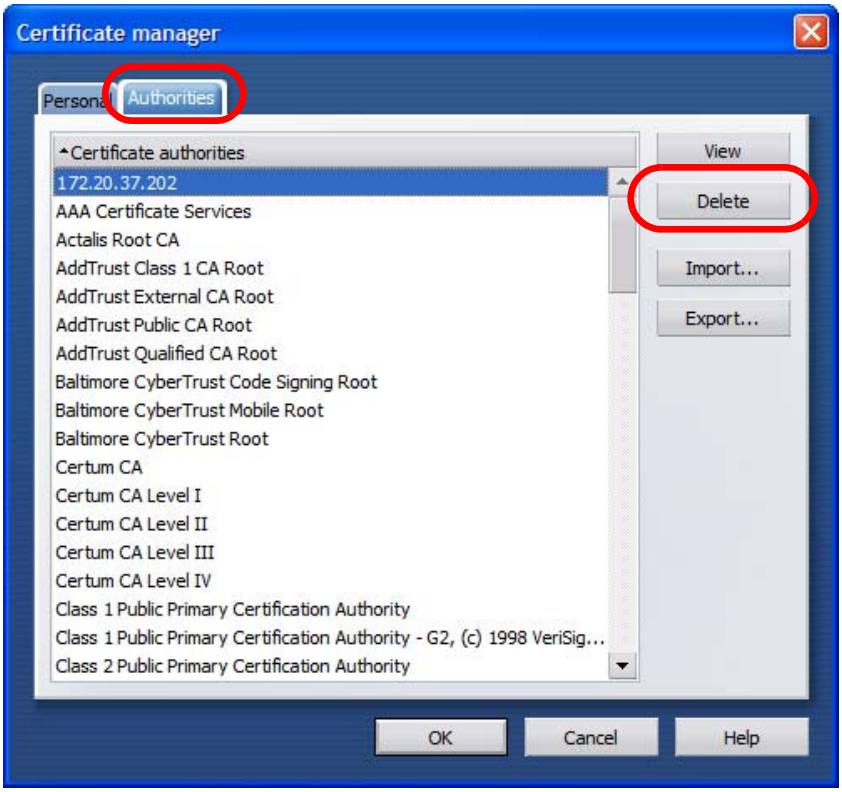
2 In **Preferences**, **Advanced** > **Security** > **Manage certificates**.

Figure 161 Opera 9: Preferences



3 In the **Certificates manager**, select the **Authorities** tab, select the certificate that you want to remove, and then click **Delete**.

Figure 162 Opera 9: Certificate manager



4 The next time you go to the web site that issued the public key certificate you just removed, a certification error appears.

Note: There is no confirmation when you delete a certificate authority, so be absolutely certain that you want to go through with it before clicking the button.

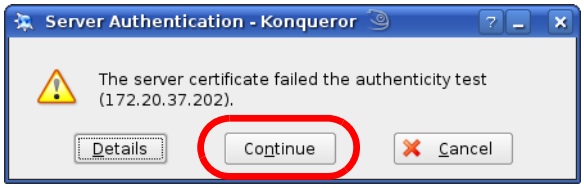
Konqueror

The following example uses Konqueror 3.5 on openSUSE 10.3, however the screens apply to Konqueror 3.5 on all Linux KDE distributions.

1 If your device's Web Configurator is set to use SSL certification, then the first time you browse to it you are presented with a certification error.

2 Click **Continue**.

Figure 163 Konqueror 3.5: Server Authentication



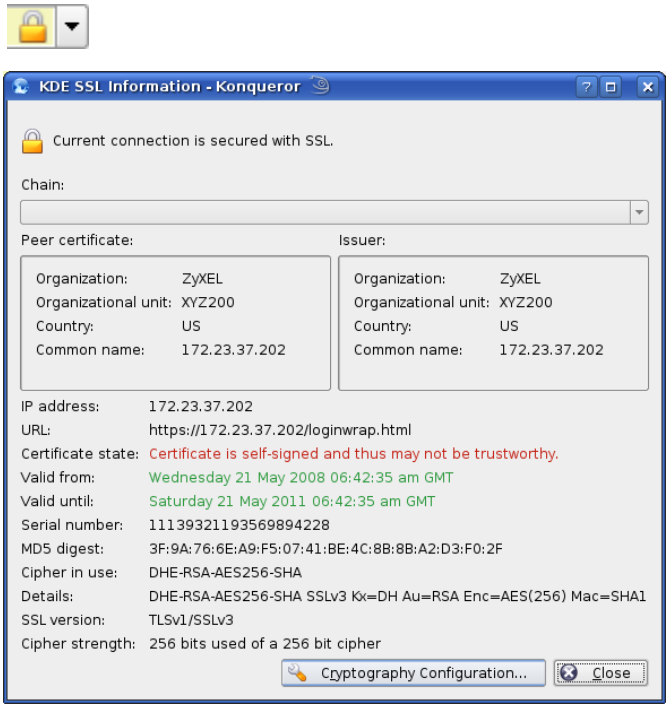
3 Click **Forever** when prompted to accept the certificate.

Figure 164 Konqueror 3.5: Server Authentication

Server Authentication - Konqueror
Would you like to accept this certificate forever without being prompted?
Forever
Current Sessions Only

4 Click the padlock in the address bar to open the **KDE SSL Information** window and view the web page's security details.

Figure 165 Konqueror 3.5: KDE SSL Information



Installing a Stand-Alone Certificate File in Konqueror

Rather than browsing to a ZyXEL Web Configurator and installing a public key certificate when prompted, you can install a stand-alone certificate file if one has been issued to you.

1 Double-click the public key certificate file.

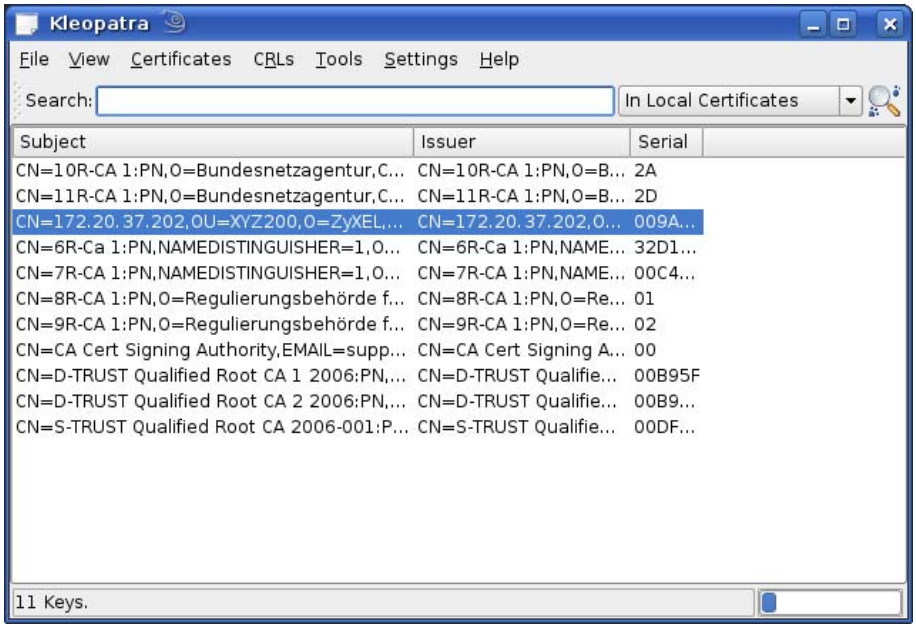
Figure 166 Konqueror 3.5: Public Key Certificate File

2 In the **Certificate Import Result - Kleopatra** dialog box, click **OK**.

Figure 167 Konqueror 3.5: Certificate Import Result

The public key certificate appears in the KDE certificate manager, **Kleopatra**.

Figure 168 Konqueror 3.5: Kleopatra


Kleopatra
File View Certificates CRLs Tools Settings Help
Search:
In Local Certificates
Subject
Issuer
Serial
CN=10R-CA 1:PN,O=Bundesnetzagentur,C... CN=10R-CA 1:PN,O=B... 2A
CN=11R-CA 1:PN,O=Bundesnetzagentur,C... CN=11R-CA 1:PN,O=B... 2D
CN=172.20.37.202,OU=XYZ200,O=ZyXEL,... CN=172.20.37.202,O... 009A...
CN=6R-Ca 1:PN,NAMEDISTINGUISHER=1,O... CN=6R-Ca 1:PN,NAME... 32D1...
CN=7R-CA 1:PN,NAMEDISTINGUISHER=1,O... CN=7R-CA 1:PN,NAME... 00C4...
CN=8R-CA 1:PN,O=Regulierungsbehörde f... CN=8R-CA 1:PN,O=Re... 01
CN=9R-CA 1:PN,O=Regulierungsbehörde f... CN=9R-CA 1:PN,O=Re... 02
CN=CA Cert Signing Authority,EMAIL=supp... CN=CA Cert Signing A... 00
CN=D-TRUST Qualified Root CA 1 2006:PN,... CN=D-TRUST Qualifie... 00B95F
CN=D-TRUST Qualified Root CA 2 2006:PN,... CN=D-TRUST Qualifie... 00B9...
CN=S-TRUST Qualified Root CA 2006-001:P... CN=S-TRUST Qualifie... 00DF...
11 Keys.

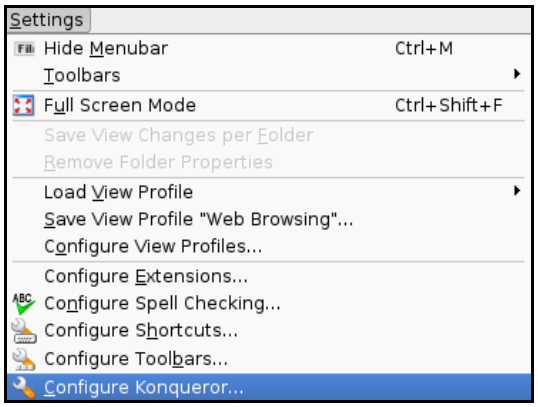
3 The next time you visit the web site, click the padlock in the address bar to open the **KDE SSL Information** window to view the web page's security details.

Removing a Certificate in Konqueror

This section shows you how to remove a public key certificate in Konqueror 3.5.

1 Open **Konqueror** and click **Settings > Configure Konqueror**.

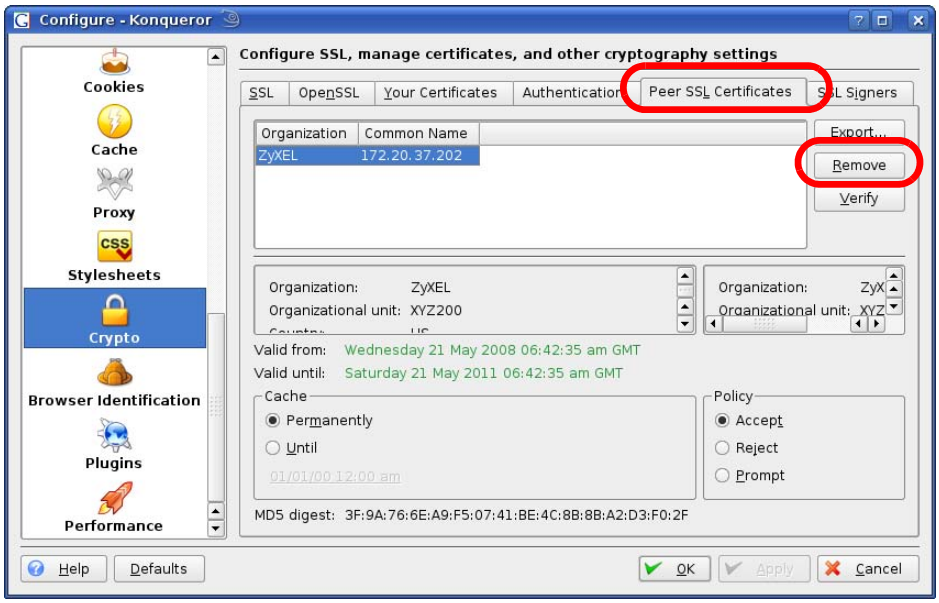
Figure 169 Konqueror 3.5: Settings Menu



2 In the **Configure** dialog box, select **Crypto**.

3 On the **Peer SSL Certificates** tab, select the certificate you want to delete and then click **Remove**.

Figure 170 Konqueror 3.5: Configure



4 The next time you go to the web site that issued the public key certificate you just removed, a certification error appears.

Note: There is no confirmation when you remove a certificate authority, so be absolutely certain you want to go through with it before clicking the button.

E

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The device complies with Part 15 of FCC rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operations.

This device has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This device generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

Notices

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

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1 Go to http://www.zyxel.com.

2 Select your product on the ZyXEL home page to go to that product's page.

3 Select the certification you wish to view from this page.

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Registration

Register your product online to receive e-mail notices of firmware upgrades and information at www.zyxel.com for global products, or at www.us.zyxel.com for North American products.

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